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ABSTRACT

This document attempts to determine whether the University and Community College System of Nevada (UCCSN) is preparing a health care workforce that is appropriate for the current and future health care needs of the state of Nevada. To assess this issue, the system collected and analyzed current data in terms of the state of health and health care in Nevada, health care workforce trends, and health care education. This report draws the following conclusions about health and health care in Nevada: (1) Nevada perennially ranks among the bottom tier of U.S. states along a wide range of health measures; (2) Nevada suffers from high levels of mental illness and behavioral health problems; (3) Nevada's poor health profile is closely tied to high prevalence rates for "at risk" behaviors including smoking and substance abuse; and (4) Nevada's poor health record is aggravated by high percentages of adults lacking health insurance, access barriers to mental health care, comparatively meager provision and distribution of primary health care resources, and low rates of routine preventative health services used. In terms of health workforce trends, the researchers found that: (1) projected employment growth for a majority of health care occupations exceed the average projected growth through 2006; (2) projected employment growth across all industry segments in the health care industry is substantial and exceeds national projections; and (3) strong employment growth is projected for a wide range of comparatively well-paying occupations requiring postsecondary credentials. The report concludes with recommendations for general policy, health care education, and health care program planning and development for UCCSN. (TGO)

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UNIVERSITY and COMMUNITY COLLEGE SYSTEM OF NEVADA

REPORT on HEALTH CARE EDUCATION in NEVADA

JANUARY 1999

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PREFACE

Nevada's health care system is entering a period of enormous change. Rapid population growth and diversification only add to the challenges faced by Nevada's health care providers and the system of higher education that prepares most of the state's health professionals. In response to these challenges, the 1997 Nevada State Legislature, through the passage of Senate Bill 385, made an appropriation to the University and Community College System of Nevada (UCCSN) to employ a health care program developer to study:

> " ... the role of the health science and allied health programs of the University and Community College System of Nevada in meeting the needs of this state relating to education and training for, and contribution to, the delivery of health care, including, without limitation, the organization of health and health-related programs within the University and Community College System of Nevada."

This report presents the principal findings of that study. It also provides a number of concrete recommendations for health professions educators and policy makers.

In the most general terms, the present study has attempted to address a fundamental question facing the state: Is the University and Community College System of Nevada preparing a health care workforce that is appropriate for the current and future health care needs of the State of Nevada? To begin answering that question, the system collected and analyzed the most current and reliable data on three elements of the state's health care system:

- *Health and health care in Nevada* – that is, data on population health, health care needs, and the societal forces shaping health and health care delivery in the State of Nevada;

- *Health care workforce trends in Nevada* – namely, data on current workforce estimates and projected demand for a wide range of health care occupations in the state; and

- *Health care education in Nevada* – primarily, current and projected graduation data on certificate and degree programs in the UCCSN that train and prepare health care professionals.

These data are presented in Chapters II through IV and form the basis of the recommendations presented in final chapter of this report.

Much of the information presented in this report consists of existing data and studies

developed by government health, labor and employment agencies. The study also utilizes information contained in reports and publications prepared by research and advocacy organizations, nonpartisan commissions, academic researchers, state licensing boards, and professional and trade associations. Finally, the report incorporates original data collected from a survey of all health care education programs in the UCCSN (e.g., past and projected enrollment and graduation data).

In some instances, the system was forced to rely on the "best data available." Consequently, the data presented in some sections of this report are suggestive, rather than conclusive, about the nature of health care delivery and, thus, the appropriate direction of health care education in Nevada. Nevertheless, this report presents a considerable amount of new information that can be immediately used to guide program planning and priority setting in existing health professions programs in the UCCSN. For example, the data suggest a number of programs whose projected graduation figures fall well short of corresponding statewide occupational projections. Data contained in this report also provide the basis for improved system-wide planning and development. For instance, the data highlight the need for program planning that is responsive to statewide needs, as well as the health care and educational needs of regions and localities.

This report represents an important first step toward system-wide monitoring of health care education, program planning, and policy development. Indeed, one of the report's strongest recommendations is the need for regular, systematic data collection and program monitoring along lines similar to that contained in this report (a report of this scope has not been conducted since 1989). The present report could easily serve as a template for future research on health workforce trends and issues affecting health care education in the UCCSN. Given the enormous and ever-changing demands placed on the state's health care system, it is imperative that health care education program planning be guided by reliable and timely research and policy analysis. It is our sincere hope that this report will stimulate greater interest in health workforce issues and the need for health care education planning that anticipates the health care needs of all Nevadans.

Following the Executive Summary, the remainder of this report is organized into four chapters. The first provides a summary of health and health care needs in Nevada. Current data indicate that Nevada is characterized by a poor population health profile and, consequently, an abundance of unmet health and health care needs. These data also indicate that, compared to other US states, Nevada fares poorly on a number of specific and overall indicators of population health. For example, the state consistently ranks among the "least healthy" US states in terms of behavioral risk factors to health (e.g., smoking), public health expenditures, and the percentage of uninsured adults. This chapter also provides an overview of major societal forces influencing health and health care in Nevada. In this chapter, it is argued that effective health care program planning in the UCCSN must not only address the unique health and health care needs of Nevada, planners must also anticipate forces affecting health and health care delivery in the state (e.g., the

shift from fee-for-service to managed care networks) – forces that will continue to fundamentally reshape the size and composition of the state's health workforce.

The next chapter presents current and projected data on employment in a wide-range of health care occupations in Nevada (e.g., physicians, respiratory therapists, home health aides). This chapter also provides data on current and projected employment growth across all industry segments of the health care sector (e.g., hospitals, skilled nursing facilities, home health agencies). For most health care occupations, data indicate substantial projected growth – in some health care occupations, employment is projected to double through the year 2006. Likewise, across all industry segments in the health sector, projected employment growth is substantial and exceeds national projections. The occupational estimates and projections presented in this chapter are best viewed as a rough indicator of the amount of employment change in any specific occupation. That is, these data are suggestive, rather than conclusive, about the precise magnitude of employment change in the health care sector in Nevada. Nonetheless, these data foretell significant employment growth across most occupations in the health care sector in Nevada and, possibly, shortages in a number of health professions.

The following chapter presents information on health care certificate and degree granting programs in the UCCSN. This chapter also provides information on new health-related programs being planned by the UCCSN campuses. Most of this chapter is devoted to a discussion of data on the current and projected number of graduates of each health care education program in the UCCSN – i.e., the number of health professionals "produced" by each program. This chapter presents a general measure of occupational demand (annual openings in each health care occupation) and supply (the number of UCCSN certificate and/or degree recipients that prepare individuals for the same occupations) in order to evaluate the degree to which UCCSN programs are meeting the health workforce needs of Nevada. The information presented in this chapter provides an occupation-by-occupation picture of supply and demand for health professionals in Nevada.

The final chapter presents the study's principal recommendations. The chapter presents a number of general policy directions for health care education programs in the UCCSN, as well as specific recommendations regarding statewide capacity adjustment in existing programs. In a number of cases, the apparent mismatch between occupational supply and demand points to the need for the system to examine statewide capacity adjustment in certain health care programs. The chapter also proposes several concrete steps that might be taken by the campuses and the system office to improve future health care education program planning and the system's ability to anticipate the rapidly changing workforce needs of Nevada.

The UCCSN System Administration would like to acknowledge the considerable assistance provided by four individuals during the data collection phase of this study: Dr. Cynthia Carruthers

at the University of Nevada, Las Vegas; Patty Brisbin at the Nevada Department of Employment, Training and Rehabilitation; Rebecca Hines, Bureau of Health Professions, Health Resources and Services Administration; and Jim LaRue at the Primary Care Development Center, Nevada State Health Division. The System Administration would also like to acknowledge the numerous individuals in the UCCSN – including UCCSN faculty, program administrators, institutional research directors, Academic Vice Presidents, and Provost – who completed the health programs survey on short notice, and who provided the System Administration Office with timely feedback and additional information on health care programs and program planning at UCCSN campuses.

John Packham, PhD
Health Care Planning and Research Coordinator
January 13, 1999

EXECUTIVE SUMMARY

A. SUMMARY OF MAJOR FINDINGS

HEALTH AND HEALTH CARE IN NEVADA

Utilizing different types and combinations of health and health care indices, data presented in this report come to remarkably consistent conclusions about health and health care in Nevada:

- Nevada perennially ranks among the bottom tier of US states along a wide range of health measures.
- The state also suffers from high levels of mental illness and behavioral health problems as evidenced by the state's high suicide rate.
- Nevada's poor health profile is closely tied to high prevalence rates for a wide range of "at risk" behaviors such as cigarette smoking and substance abuse.
- The state's comparatively poor health record is aggravated by high percentages of adults lacking health insurance coverage, access barriers to mental health care, comparatively meager provision and distribution of primary health care resources, and low rates of routine preventive health services use.

This report contends that enormous population growth, attempts to reign in health care costs and improve access to health services, and the growth of corporate managed care are major trends that will affect the size and composition of Nevada's health workforce. Nevada's abundant health care needs and rapid changes in the state's health care sector will thus continue to place additional demands on UCCSN programs that educate and prepare health care professionals.

HEALTH CARE WORKFORCE TRENDS IN NEVADA

This report presents data on current and projected employment in a wide range of health care occupations and provider settings in Nevada. Current data indicate that:

- Projected employment growth for a majority of *health care occupations* exceeds the average projected growth for all occupations in the state through the year 2006 – in some health care occupations, employment is projected to double through the first

decade of the next century.

- Projected employment growth across all *industry segments* in the health care industry is substantial and exceeds national projections.

- Above average employment growth is not simply limited to comparatively low-paying service and technical positions in the health sector – strong growth is projected for a wide-range of comparatively well-paying occupations requiring post-secondary credentials and preparation.

The data presented on workforce trends are suggestive, rather than conclusive, about the precise magnitude of employment change in the state. Nevertheless, these data foretell broad-based employment growth in the health care sector in Nevada and, potentially, future shortages in a number of health professions. These data indicate that a key challenge facing health care educators in the UCCSN in the coming decade will be meeting the expanding demand for health care professionals in Nevada.

HEALTH CARE EDUCATION PROGRAMS IN THE UCCSN

This report presents current information on all health care certificate and degree granting programs in the UCCSN, highlighting data on the current and projected number of graduates of each health care education program in the UCCSN (i.e., the number of health professionals "produced" by each program). It also provides information on new health-related programs being planned by the UCCSN campuses. Based on the best employment data and UCCSN graduation figures, a number of health care occupations are characterized by an imbalance between projected occupational demand and supply in Nevada. Some of these discrepancies are already being addressed in the form of program expansion (i.e., programs are planning to produce more graduates) and proposals for the creation of new health care programs at UCCSN campuses. However, the data strongly indicate a system-wide need to examine capacity adjustment in existing health care education for a number of health care professions in the state.

B. SUMMARY OF PRINCIPAL RECOMMENDATIONS

GENERAL POLICY RECOMMENDATIONS FOR THE UCCSN

In the most general terms and within available resources, the University and Community College System of Nevada (UCCSN) should prepare a health care workforce that is appropriate for the current and future health and health care needs of Nevada. It is recommended that:

- The UCCSN should continue to provide high quality health care education programs that prepare health professionals to meet the health and health care needs of the citizens of Nevada.

- The UCCSN should provide high quality health care education programs that meet the Nevada health care industry's evolving needs for qualified health care professionals.

- The UCCSN should continue to strive to improve the access of resident Nevadans to health professions education through a variety of means, including traditional classroom-based instruction and distance education.

RECOMMENDATIONS FOR UCCSN HEALTH CARE EDUCATION PROGRAMS

Most health care occupations in the State of Nevada are characterized by a current and projected demand for health care personnel in excess of the supply produced by health care programs in the UCCSN. Based on the assessment of current and projected statewide data on occupational supply and demand in health care occupations contained in this report, it is recommended that:

- The UCCSN should immediately undertake an evaluation of the appropriateness and feasibility of expanding statewide capacity in a number of UCCSN programs that prepare individuals to enter certain health care occupations in Nevada.

- The UCCSN should organize and convene a committee of UCCSN education program faculty and health care experts to evaluate the appropriateness and feasibility of expanding statewide capacity in UCCSN programs that prepare and train health care professionals in Nevada.

- The UCCSN should act on the findings and proposals developed by the committee

charged with assessing statewide capacity adjustment in health care education programs in the UCCSN.

RECOMMENDATIONS FOR HEALTH CARE PROGRAM PLANNING AND DEVELOPMENT IN THE UCCSN

The recommendations outlined in this section address three shortcomings of current health care program planning and development in the UCCSN: (1) the ad hoc and uncoordinated nature of current program planning in the system; (2) the need for better information on health workforce needs in Nevada; and (3) the need for current and systematic data on health education programs in the UCCSN. It is recommended that:

- The UCCSN should establish a position to direct health professions research and analysis, and to coordinate program planning, development, and implementation among UCCSN campuses.

- The UCCSN should prepare a biennial report on health care education in Nevada, which will provide UCCSN campuses, the UCCSN system administration, and state policymakers with a regular and systematic summary of health care needs, health care personnel trends, and health care education in Nevada.

- The UCCSN should undertake research on several important health professions issues facing the UCCSN and the State of Nevada, including mental and behavioral health education in the state; education programs for the public health professions; minority representation in the health professions in Nevada; training, preparation, and retention of primary care providers in underserved areas of Nevada; and national forces influencing the supply of health care professionals in Nevada.

In conclusion, the development of a health care workforce equal to the health care challenges of Nevada will increasingly require system-wide planning and policy analysis that informs the development of new and existing health professional programs in the UCCSN.

HEALTH AND HEALTH CARE IN NEVADA

A. INTRODUCTION

Sweeping changes in the organization, financing, and delivery of health care are forcing major changes in the number, type, distribution, and education of health care personnel in Nevada. Adding to these current challenges facing policy makers and health professions educators in Nevada are the myriad health and health care needs facing the state. This chapter examines health and health care in Nevada and highlights the numerous health care needs of the state. It also outlines the major societal forces affecting population health and the health care system in the state. The primary purpose of this discussion is to place the health workforce trends and health care education programs discussed in subsequent chapters in their proper context.

Data presented in this chapter indicate that Nevada possesses a unique mix of generally poor population health indicators, high percentages of the state's population who face financial and geographic barriers to health care services, and many people who live unhealthy lifestyles. This health and health care profile is, in part, a product the state's major industries – gaming and tourism – which have historically been characterized by low pay and lack of employment-related benefits such as health and dental insurance. The state's health profile appears to be a product of the 24-hour-a-day lifestyle of the entertainment industries, an underdeveloped public health sector, and a lack of public support for governmental solutions to health and social problems. Addressing these health and health care needs remains a major challenge facing the state as it enters the 21st century.

B. HEALTH AND HEALTH CARE NEEDS IN NEVADA

This section summarizes data contained in three reports that provide measures of state-level population health and health care system performance in the United States:

- Health Risk Management Corporation's *IHQ* Quality*FIRST Index 1998*,
- Morgan Quitno Corporation's *Health Care State Rankings 1998*, and
- ReliaStar Financial Corporation's *State Health Rankings 1998*

Each of these reports provides current and comprehensive information on population health and

the status of health care in Nevada.[1] They also provide comparative data on the health of the state's population vis-a-vis other states, and on Nevada's mixed progress on the same health indicators over time. Again, the purpose of this discussion is to place the health workforce trends and health professions education examined in later chapters in context.

1. Health Risk Management's *IHQ* Quality*FIRST Index 1998*

The IHQ *Quality*FIRST Index 1998 (HRM Index) is a weighted average of 46 specific measures of health and health care in each state. Each item in the HRM Index and Nevada's ranking among US states are listed in Table 1, where states are ranked from "healthiest" (1) to "least healthy" (50). A detailed version of the HRM Index is included in Appendix 1 of this report. Among US states, Nevada's overall rank is 46th with a score of 89.1 percent of the national average in 1998. Moreover, on two-thirds of the individual measures used to formulate the state's overall or composite score, Nevada ranks below the national average.

State strengths include a low percentage of expenditures for household health care (a state rank of 4th in the US) and a reported overall poverty rate of 9.6% (10th). However, these positive attributes are more than offset by shortcomings on a number of health indicators. The latter include a high suicide rate (46th), a low rate of public health expenditures (46th), dentist shortages (48th), reported immunizable diseases (45th), childhood immunization compliance (49th), and cigarette smoking prevalence (47th). In summary, according to the 1998 edition of the Health Risk Management HRM Index, Nevada currently ranks among the bottom tier of US states across a wide-range of indicators of population health, health system access and quality, and consumer health outcomes.

2. Morgan Quitno Corporation's *Health Care State Rankings 1998*

The Morgan Quitno Corporation's report, *Health Care State Rankings 1998*, provides a similar portrait of health and health care in Nevada. The Morgan Quitno index (MQC Index) is a weighted average of 23 individual measures of population health and health care quality in each state. Each item in the MQC Index and Nevada's ranking among US states are listed in Table 2, where states are ranked from "healthiest" (1) to "least healthy" (50). A more detailed description of Nevada's performance in the Morgan Quitno Corporation state rankings is included in the

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[1]These reports actually utilize the most recent data available, i.e., most of the data do not reflect health and health care conditions in 1998, per se. Rather, some data were collected relatively recently (1996 or 1997), while other were collected in the early 1990's. The data utilized in these reports come from a variety of sources including State of Nevada health, labor, and economic agencies.

Appendix 2 of this report. While the composition of measures differs substantially from that of the HRM Index, the Morgan Quitno Rankings still places Nevada at 39th overall among US states in 1998. And, on approximately two-thirds of the individual indices of health and health care, Nevada ranked at or below the US average.

The MQC Index indicates some health and health care successes, including Nevada's rank among US states on infant mortality (7th). However, Nevada's rank on prenatal care (47th) and childhood immunization compliance (46th) underscores the state's mixed record on population-level indicators of childhood health and well-being. In addition to comparatively poor indicators on behavioral risk factors to health, Nevada fares poorly on measures of access to community health resources – 49th in the US on community hospital beds per 1,000 square miles and 44th in community hospital beds per capita – and access to primary care providers (32nd). In summary, according to the Morgan Quitno Corporation, Nevada presently ranks among the bottom tier of US states on a wide range of indicators of morbidity and mortality, health care facilities and providers, health care financing and insurance coverage, and physical fitness.

3. ReliaStar Financial Corporation's *State Health Rankings 1998*

The final index of population health and health care in Nevada reviewed for this report is contained in the ReliaStar Financial Corporation's *State Health Rankings 1998*. The ReliaStar Financial Corporation's index for each state (ReliaStar Index) is a weighted average of 17 specific measures of population health and health care quality. Each item incorporated in the ReliaStar state profiles and Nevada's ranking among US states are listed in Table 3, where states are ranked from "healthiest" (1) to "least healthy" (50). A detailed account of Nevada's ranking in the ReliaStar state rankings is included in Appendix 3 of this report.

According to the 1998 ReliaStar Index, Nevada currently ranks 47th among US states in terms of the overall health of the population. This figure represents a slight improvement over the previous year's rank of 48th in the US. However, over the 1990's Nevada's overall position in the annual ReliaStar state health rankings has never been better than 41 among US states. And, as was the case with the previous two indices, Nevada continues to rank among the bottom tier of US states along a broad range of measures of health-related lifestyle, access to preventive and curative health care, occupational safety, and health outcomes.

Table 1: HRM *Quality*FIRST Index 1998

Note: States are ranked from "healthiest" (1) to "least healthy" (50).

OVERALL NEVADA RANKING: 46

POPULATION HEALTH	**39**	**HEALTH CARE SYSTEM**	**49**
1. High School Graduation	37	27. Per Capita Health Care Costs	27
2. Senior Citizen Education	8	28. Public Health Expenditures	46
3. Head Start Enrollment	50	29. Primary Care Physician Shortages	35
4. College Graduates	42	30. Dentist Shortages	48
5. Drinking Water Quality	9	31. Preventable Hospitalizations	20
6. Air Pollution	40	32. Board Certified Specialists	26
7. Smoking	47	33. Complication Rates	41
8. Sexually Transmitted Diseases	10		
9. Alcohol-Related Traffic Deaths	44	**CONSUMER HEALTH OUTCOMES**	**46**
10. Non-Use of Seat Belts	27	34. Prenatal Care	47
11. Sedentary Lifestyle	9	35. Immunizations	49
12. Overweight	16	36. Mammograms	22
13. Violent Crime Rate	43	37. Pap Smears	24
14. Lack of Health Insurance	34	38. Rectal Examinations	34
15. Overall Poverty	10	39. Diabetes	2
16. Childhood Poverty	19	40. Immunizable Diseases	45
17. Income Skew	17	41. Days Lost Due to Illness	27
18. Household Healthcare Expenditures	4	42. Low Birthweight	26
19. Unemployment Rate	33	43. Years of Potential Life Lost	41
20. Tax on Cigarettes	24	44. Infant Mortality Rate	15
21. Cancer	29	45. Lung Cancer Deaths	44
22. AIDS/HIV	45	46. Heart Disease Deaths	33
23. Hypertension	2		
24. Births to Teens	29		
25. Suicide Rate	46		
26. Self-Reported Health Status	33		

Source: Health Risk Management, Inc. (1998).

Table 2: Morgan Quitno Corporation Health Care State Rankings 1998

Note: States are ranked from "healthiest" (1) to "least healthy" (50).

OVERALL NEVADA RANKING: 39

1. Low Birthweight Babies	28
2. Teen Pregancy	29
3. Prenatal Care	47
4. Death Rate	15
5. Infant Mortality	6
6. Cancer Mortality	44
7. Suicide	50
8. Community Hospitals	49
9. Community Hospital Beds	44
10. Primary Care Access	32
11. Uninsured Population	33
12. Change in Uninsured Population	3
13. Health Care Expenditures	47
14. Per Capita Health Care Expenditures	34
15. Cancer Incidence	17
16. AIDS Incidence	43
17. Sexually Transmitted Disease Rate	21
18. Childhood Immunization	46
19. Immoderate Alcohol Consumption	46
20. Smoking	46
21. Physical Health	25
22. Overweight Adults	13
23. Safety Belt Usage	12

Source: Morgan Quitno Corporation (1998).

Table 3: ReliaStar Financial Corporation State Health Rankings 1998

Note: States are ranked from "healthiest" (1) to "least healthy" (50).

OVERALL NEVADA RANKING: 47

1. Prevalence of Smoking	47
2. Motor Vehicle Deaths	41
3. Violent Crime	43
4. Risk for Heart Disease	11
5. High School Graduation	36
6. Unemployment	17
7. Adequacy of Prenatal Care	39
8. Lack of Health Insurance	32
9. Support for Public Health Care	39
10. Occupational Fatalities	36
11. Limited Activity Days	18
12. Heart Disease	33
13. Cancer Cases	18
14. Infectious Diseases	44
15. Total Mortality	47
16. Infant Mortality	5
17. Premature Death	40

Source: ReliaStar Financial Corporation (1998).

In conclusion, each of the measures and state rankings discussed in this chapter provides a succinct "snapshot" of health and health care in Nevada. Utilizing different types and combinations of health and health care indices, these reports come to remarkably consistent conclusions about health and health care in Nevada:

- Nevada perennially ranks among the bottom tier of US states along a wide range of health measures including deaths from heart disease and cancer, as well as motor-vehicle and occupational fatalities.

- The state also suffers from high levels of mental illness and behavioral health problems as evidenced by the state's high suicide rate.

- Nevada's poor health profile is closely tied to high prevalence rates for a wide range of "at risk" behaviors such as cigarette smoking and immoderate alcohol consumption – rates that have not appreciably improved over the past decade.

- The state's comparatively poor health record is also aggravated by low rates of routine preventive health services use such as prenatal care, childhood immunization compliance, and recommended cancer screening.

- Finally, the state's poor population health profile is compounded by high percentages of adults lacking health insurance coverage, access barriers to mental health care, and comparatively meager provision and distribution of primary health care resources.

In summary, Nevada is characterized by a poor overall population health profile and abundant unmet health care needs. In the next decade, attempts by policymakers to address the health and health care needs of the state will have an important impact on the healthcare workforce and, thus, UCCSN programs that educate and prepare health care professionals.

C. FORCES SHAPING HEALTH CARE AND THE HEALTH WORKFORCE IN NEVADA

This section provides an overview of the major forces shaping the organization and delivery of health care in Nevada. These forces are summarized in Table 4. In addition to population health and health care needs, these forces include:

- High and rising health care costs
- Unequal access to health care

- Growth of managed care
- Corporate transformation of health care provision
- Federal and state roles in health care
- Primary care concerns
- Social and demographic change in Nevada

These forces will be exerting an enormous influence on the size, composition, and educational needs of the state's health care workforce in the coming decade.[2]

1. Health Care Costs

The major force driving change in the health care system is the high and rising cost of health care (Iglehart 1999; Anderson 1997; Congressional Budget Office 1997; Evans 1997). In 1980, per capita health care costs in the United States were approximately $1,052. By 1995, per capita costs had risen to $3,621. During the same period, health expenditures as a percent of the nation's gross domestic product rose from 8.9% to nearly 14%. Another illustration of soaring health costs is the proportion of governmental budgets devoted to health expenditures. In 1960, 3.3% of federal government expenditures were spent on health. By 1995, $1.6 trillion or 20.2% of federal expenditures were devoted to health. During the same period, approximately $38.4 billion or 10% of state and local budgets were spent on health – by 1995 that figure had risen to $901.1 billion or 14.2%. Finally, price inflation in the health sector has outstripped the cost of goods and services in every other sector of the economy. Between 1980 and 1995, the cost of medical care increased faster than any other major category of personal expenses (e.g., food, housing, energy) (National Center for Health Statistics 1998, 1997).

High care costs are not simply a function of the growth of public programs such as Medicaid and Medicare. They are also a product of the technological sophistication of health care products and services, high administrative costs in health care, population growth and aging, and, importantly, system-wide incentives that have historically resulted in the overutilization of services (Woolhandler and Himmelstein 1997; Bodenheimer and Grumbach 1998). Recent research indicates that cost escalation in the next few years will not be as great as it has been in the past three decades (Ginsberg and Gabel 1998; Smith, et al. 1998). Nevertheless, price inflation in the health sector will continue exceed all other sectors of the economy.

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[2]There are additional trends, such as advances in medical technology, that could be added this list. Generally though, these additional trends can be subsumed into the existing framework. For example, the development and deployment of advanced medical technology are processes increasingly subordinate to cost containment pressures (e.g., the willingness of insurers to pay for new technologies) and the corporatization of health care (e.g., whether the use of new technologies adds to the profitability of the firm).

Table 4: Forces Shaping Health Care in Nevada

Health Care Costs • High health care costs (e.g., US spends $3,633 per capita on health services) • Rapid health care costs escalation (e.g., the consumer price index in the health care sector consistently exceeds all other sectors of the economy)
Unequal Access to Health Care • Financial barriers to health care services (e.g., approximately 16% of Nevada's population lacked health insurance coverage at some point in 1997) • Geographic barriers to health care services (e.g., eight Nevada counties have been designated as medically underserved by the Nevada Board of Medical Examiners)
Growth of Managed Care • Pre-authorized provision of care, utilization/cost review, and capitated payment mechanisms introduced by managed care corporations are rapidly replacing traditional fee-for-service plans • This trend is driving a shift in power and authority from institutional providers (e.g., hospitals, medical profession) to institutional purchasers of care (e.g., governments and businesses)
Corporate Transformation of Health Care Provision • Shift from care provided by local non-profit organizations to regional or nationally-based for-profit health care conglomerates (e.g., corporate hospital chains) • Shift from single-organization entities to horizontally and vertically integrated, poly-corporate health providers (e.g., health maintenance organizations) • Industry consolidation and concentration – most segments of the health sector are dominated by a handful of corporations (e.g., pharmaceuticals, commercial insurance)
Federal and State Roles in Health Care • Persistent cost, access, and quality concerns will ensure prominent roles for governments as payers, administrators, and regulators of health care services • Most of the health care legislation being considered by the 1999 Nevada Legislature and the 106th US Congress will have a significant impact on the size and composition of the overall health care workforce and a number of individual health care occupations
Primary Care Concerns • Political and economic pressures continue to build for addressing the specialty and geographic maldistribution of primary care providers and access barriers to routine preventive services
Social and Demographic Change in Nevada • Rapid population growth, population aging, and population diversification • Increasing pressures on the health care system to deal with social problems (e.g., teen pregnancy, substance abuse, domestic violence)
Population Health Profile of Nevada • Poor population health indicators • Inequalities in health status by socioeconomic status (income, education), and race/ethnicity

For the purposes of this report, the most significant aspect of high and rising health care costs is that they have set in motion numerous efforts by business corporations, governments, and insurance companies to control costs by controlling medical care (Bishop 1998; Bodenheimer and Sullivan 1998a, 1998b). The reorganization of traditional fee-for-service medicine into managed care plans represents the most significant of these developments. Cost-containment efforts, in turn, are dramatically reshaping the size and composition of the health workforce. For example, the growing role of "non-physician" providers of primary care (e.g., advanced nurse practitioners, physician assistants) is a trend clearly fueled by private and public-sector led strategies to control costs. Nonphysician clinicians are gaining access to reimbursement from insurers, increasingly performing tasks in hospitals and other clinical settings that have been performed by physicians, and are being integrated into managed care organizations (Cooper, Laud, and Dietrich 1998). In summary, the high and rising costs of health care are a major force shaping Nevada's health care system and health workforce.

2. Unequal Access to Health Care

Another major stimulus to change in the health care sector is persistent financial and geographic barriers to health care services (Carrasquillo, et al. 1999; Kuttner 1999; Census Bureau 1998; Liska et al. 1998; Weinick et al. 1998; Weinick et al. 1997). Access to health care simply refers to "the ability to obtain health services when needed" (Bodenheimer and Grumbach 1998). The lack of health insurance coverage and the geographic maldistribution of health care resources represent the major access barriers faced by Nevada residents. Table 5 provides current data on health insurance coverage in Nevada. In 1997, an estimated 16.2% of adult Nevadans lacked health insurance coverage at some point in the year. While half of the uninsured experienced a short-term lapse in coverage (i.e., they were insured at some point during the year), an equal number of adult Nevadans were chronically uninsured or lacked coverage for one year or more. These data also reveal that the percentage of uninsured adults varies considerably across the state, from a low of 11.3% in Lincoln County to 32.6% in Esmeralda County (Center for Business and Economic Research 1998).

Tables 6 and 7 highlight enormous variation in the number of physicians and registered nurses licensed by the State of Nevada by county of residence.[3] These data underscore the fact that an ability to pay for care does not guarantee *access* to health care providers and resources. Again, for the purposes of this report, unequal access to health care is a central issue in public debates about the organization and delivery of health care in this state and the nation.

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[3]Tables 6 and 7 also highlight the low number of physicians and registered nurses in Nevada – across most counties and for the state as a whole – as compared to the rest of the US.

Table 5: Status of Health Insurance Coverage of Adult Nevadans by County – 1997

COUNTY	STATUS OF HEALTH INSURANCE COVERAGE		
	Insured Continuously During the Past Year	Uninsured Short-Term Lapse (Uninsured 3 to 9 months or on and off again)	Uninsured Long-Term Lapse (Uninsured one year or more)
NEVADA AVERAGE	83.9%	8.1%	8.1%
Carson	83.3	7.9	8.8
Churchill	85.2	6.2	8.6
Clark	84.1	8.1	7.8
Douglas	85.7	6.4	7.9
Elko	86.6	7.7	5.7
Esmeralda	67.4	9.9	22.7
Eureka	87.5	6.1	6.4
Humboldt	81.5	7.2	11.3
Lander	79.4	9.2	11.4
Lincoln	88.7	3.3	8.0
Lyon	79.2	8.2	12.6
Mineral	81.4	8.9	9.7
Nye	80.2	8.3	11.5
Pershing	84.8	10.5	4.7
Storey	72.5	19.4	8.1
Washoe	83.6	8.4	8.0
White Pine	78.8	6.3	14.9

Source: UNLV Center for Business and Economic Research (1998).

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Table 6: Number of Physicians per 100,000 Population in Nevada by County of Residence* – 1997

COUNTY	PHYSICIANS per 100,000 POPULATION
Rate – United States (1995)	255.90
Rate – Nevada	155.07
Carson	218.22
Churchill	83.82
Clark	147.63
Douglas	121.24
Elko	81.74
Esmeralda	0.00
Eureka	120.48
Humboldt	39.95
Lander	28.45
Lincoln	72.99
Lyon	23.05
Mineral	87.46
Nye	36.22
Pershing	15.15
Storey	0.00
Washoe	237.12
White Pine	93.99

*Number of physicians licensed by the State of Nevada and actively practicing in the state.

Source: Nevada State Board of Medical Examiners (1998).

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Table 7: Number of Registered Nurses per 100,000 Population in Nevada by County of Residence* – 1998

COUNTY	REGISTERED NURSES per 100,000 POPULATION
Rate – United States (1995)	713.70
Rate – Nevada	640.16
Carson	831.18
Churchill	528.08
Clark	619.95
Douglas	573.37
Elko	509.33
Esmeralda	342.47
Eureka	240.96
Humboldt	359.59
Lander	256.05
Lincoln	413.63
Lyon	434.64
Mineral	291.55
Nye	318.73
Pershing	287.88
Storey	539.77
Washoe	828.96
White Pine	413.53

***Number of registered nurses holding an active license from the State of Nevada.**

Source: Nevada State Board of Nursing (1998).

Consequently, strategies to improve access to health care – be it efforts to reduce financial or

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geographic barriers to care (e.g., Nevada Checkup Program) – will have a profound impact on both the size and composition of the state's health care workforce.

3. Growth of Managed Care

The shift from fee-for-service plans to managed care networks is another major force affecting the health care sector and the health workforce (Jenson et al. 1997; Iglehart 1994). Managed care represents the most significant development initiated by business corporations, governments, and insurance companies to control high and rising health care costs over the past two decades. Cost control mechanisms introduced by managed care corporations include the pre-authorized provision of care, utilization and cost review, and capitated payment mechanisms. In essence, managed care is a strategy to control costs by controlling the demand for and use of health care services. As such, it is a trend that has resulted in a fundamental shift in power and authority from institutional providers of health care (e.g., physicians, hospitals) to institutional payers and insurers (namely, commercial insurance companies, governments, businesses) (Bodenheimer and Grumbach 1998).

For the purposes of this study, managed care is exerting a major influence on the type and composition of personnel and facilities that provide health care. For example, fee-for-service medicine and indemnity insurance have historically promoted the use of inpatient, hospital-based services. Managed care systems, by contrast, tend to promote the use of ambulatory primary care providers and the use of a wide-range of non-hospital-based facilities. Health care educators in the UCCSN will increasingly be called upon to prepare individuals to practice in ambulatory or community settings (e.g., home health care, skilled nursing facilities). They will also be required to prepare health care professionals that are able to *succeed* in an increasingly corporate-oriented, managed-care environment (Pew Commission Health Professions Commission 1995a, 1993b).

4. Corporate Transformation of the Health Care Sector

A related force reshaping the health care system and the health workforce is the corporate transformation or "corporatization" of the health sector (Light 1997; Kuttner 1996a, 1996b). This trend refers to a fundamental shift in the organization and philosophy of health care delivery in the United States (Starr 1982). The corporate transformation of health care has at least three important dimensions. First, it refers to a change in the nature of ownership and control from community-controlled, nonprofit organizations to regionally or nationally based, for-profit health care conglomerates (e.g., the rise of for-profit hospital chains such as Nashville, Tennesee-based Columbia/HCA and the related demise of community-based, non-profit and public hospitals

throughout the nation).[4]

The second element of the corporate transformation is the increasing horizontal and vertical integration of health care delivery – that is, the comparative decline of single-purpose, freestanding institutions (e.g., acute-care hospitals) and the growth of multi-institutional health-care "systems" that provide a wide range of services encompassing multiple levels of care (e.g., health maintenance organizations). Third, the corporatization of health care refers to the increasing consolidation and concentration of industry segments throughout the health sector. For example, the proposed purchase of Prudential Healthcare by Aetna, Inc. would create the nation's largest managed care corporation, Aetna U.S. Healthcare, with 18.4 million managed care members and the largest provider of dental benefits with 15 million members. This merger would also reduce the number of major managed care organizations from four to three. Consolidation is proceeding apace in most segments of the health industry (e.g., pharmaceuticals, laboratory services, hospitals, insurance). For the purposes of this report, the corporate transformation of health care is influencing the manner in which health services are organized and delivered and, consequently, the type and amount of health professionals required by the evolving health care industry. While the corporate transformation of health care is clearly a trend "in progress," it is equally clear that it represents a major force affecting the supply, demand, and training of health care professionals in Nevada.

5. Federal and State Roles in Health Care

The persistent problems of health care costs and access to health services will ensure prominent roles for federal and state governments as payers, providers, and administrators of health services for the foreseeable future (Litman and Robins 1997; Smith 1997). In addition, quality of care issues associated with the growth of managed care and the broader corporatization of health care will expand regulatory roles already played by governments – particularly, the licensing and certification of health care professionals and facilities (Chassin et al. 1997; Daniels and Sabin 1998).[5] In general, new governmental health initiatives will be characterized by

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[4]In Clark County, five of the county's seven "community" hospitals are owned and operated by for-profit health care companies that, in some cases, are headquartered outside of Nevada. The largest hospital in Las Vegas is owned by Columbia/HCA. On a similar note, Las Vegas essentially has one public hospital – University Medical Center – that provides indigent medical care. (MacPherson 1997). Finally, each of the ten HMO's licensed by the State of Nevada to operate in Clark County is a for-profit enterprise – there are no domestic non-profit HMO's currently operating in the Las Vegas area (Bureau of Health Planning and Statistics 1998).

[5]In this section, the focus is on state and federal influences on the *demand* for health care professionals. Governmental policies are, of course, a key determinant of the *supply* of health care professionals. These include federal support for graduate medical education and the construction of educational facilities, immigration policies, and policies that define the scope of practice for health professions.

incremental federal efforts and comparatively more pro-active and innovative efforts by governors and legislatures. For the purposes of this report, efforts by the federal government and the State of Nevada to reign in health care costs, expand access to health services, and ensure health care quality will have a significant effect on the demand for health care professionals. State government efforts to expand health insurance coverage to children (e.g., Nevada Checkup Program) and proposed federal legislation to partially fund long-term care for the elderly are examples of current governmental policies and proposals that will certainly affect the demand for additional health care providers in Nevada. These efforts will thus place additional demands on the UCCSN to prepare health care professionals to meet any expansion of services.

6. Primary Care Concerns

Another force driving health systems change in Nevada has been the growth of primary care concerns (Bureau of Health Professions 1993; National Association of Community Health Centers 1998; Primary Care Development Center 1996). Efforts by policymakers to address these concerns will directly affect the size and composition of the state's health workforce. Primary care refers to "a comprehensive range of public health, preventive, diagnostic, therapeutic, and rehabilitative services, the goals of which are to prevent premature death, disease and disability; preserve functional capacity; and enhance overall quality of life" (Bureau of Health Professions 1993). Many health care experts in Nevada contend that increasing access to primary care improves the population's health and is an effective means of containing health care costs. The shift from a health system currently dominated by medical specialists and subspecialists to one guided by primary care professionals or generalists will require fundamental changes in (1) the reimbursement of health services, (2) the financing of undergraduate and graduate health professions education, and (3) existing barriers to practice for nonphysician primary care personnel (Bureau of Health Professions 1993). For the purposes of this report, this shift will place new demands on health care programs in the UCCSN to produce primary care providers. It will also require program administrators in the UCCSN to work with employers to expand community-based ambulatory settings within which to train and to provide (re) training opportunities for specialists in mid-career.

7. Social and Demographic Change in Nevada

Population growth, aging, and diversification in Nevada represent a set of forces dramatically affecting the state's health care system and health workforce (Robison 1998; Nevada Association of Hospitals and Health Systems 1997; Winter and Thornton 1994). Rapid population growth will continue to increase the overall demand for health care services in Nevada. Much of the projected increase in demand for health professionals in Nevada is a sheer a function of rapid population growth – particularly in the southern region of the state. In addition, the increased incidence of disease and disability associated with an aging population will fuel the overall demand for health care and change the specific types of services needed by older Nevadans. Finally, the changing racial and ethnic composition of the state is also affecting the health workforce needs of the state. For example, bridging the cultural and linguistic gaps that affect access to health care will require an increase in the number of health care professionals serving minority and underserved populations (e.g., Spanish-speaking primary care providers). For the purposes of this report, population change will have a profound impact on the size and composition of the states' health care professions.

D. SUMMARY: HEALTH AND HEALTH CARE IN NEVADA

In summary, data presented in this chapter indicate that the state is characterized by numerous unmet health and health care needs. Effective solutions to many of these needs clearly lie beyond the scope of the state's health care system, per se. For example, the state's comparatively high rates of teen pregnancy, substance abuse, and youth smoking are ultimately social problems, rather than health care problems. Nevertheless, the state's poor health profile will continue to place heavy demands on the state's health care system. This chapter has also presented an overview of the major forces shaping the health care system and the demand for health care professionals in Nevada. In addition to addressing the health and health care needs of the state's population, health care organizations and health care education programs in Nevada will continue to face increasing demographic, economic, and political pressures to keep pace with the state's rapidly changing health care system and health workforce requirements. As we enter the next century, the University and Community College System of Nevada will play a critical role in meeting these health, health care, and health workforce challenges of the state.

HEALTH CARE WORKFORCE TRENDS IN NEVADA

A. INTRODUCTION

This chapter provides an overview of health care personnel trends in Nevada. It presents current and projected data on employment in a wide-range of health care *occupations* in Nevada (e.g., physicians, respiratory therapists, home health aides). It also provides data on current and projected employment growth across all *industry* segments of the health care sector (e.g., hospitals, skilled nursing facilities, home health agencies). Overall, the data indicate substantial projected growth for a majority of health care occupations – in some cases, employment is projected to double through the first decade of the next century. Similarly, projected employment growth across all segments in the health care industry is substantial and exceeds national projections.

The information presented in this chapter consist largely of published and unpublished data collected by the US Bureau of Labor Statistics, the Nevada State Department of Employment, Training and Rehabilitation (DETR), and state licensing boards. Data developed by the DETR (1998a, 1998b) provide the primary basis of the health care employment projections and explanations for employment change presented in the following discussion. The data on employment projections presented throughout this chapter should be approached with caution, since they are largely extensions of past employment patterns and thus may not reflect the numerous factors affecting a rapidly changing health care sector in the state. The assumptions and limitations of DETR's projections are described in Appendix 4.

In general, these data are suggestive, rather than conclusive, about the precise magnitude of employment change in the state. Nonetheless, these data foretell broad-based employment growth in the health care sector in Nevada and, potentially, future shortages in a number of health professions. For most of the health care occupations examined in this chapter, employment is projected to grow as fast or faster than the average growth rate for all occupations in the state.[6] These data thus point to a number of key challenges facing health care educators in the UCCSN that are examined in subsequent chapters of this report.

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[6]Throughout this chapter the percentage change in projected employment for each occupation is compared to the "average growth rate for all occupations in the state." For the period 1996 to 2006, the "average growth rate for all occupations in the state" is an estimated 54%. The figure of 54% is the benchmark used in this chapter for assessing the pace of employment growth in health care occupations.

Table 8: Health Care Occupations Included in the Health Care Education Study

HEALTH DIAGNOSING OCCUPATIONS

- Chiropractors
- Dentists
- Optometrists
- Physicians
- Podiatrists

HEALTH ASSESSMENT AND TREATMENT OCCUPATIONS

- Dietitians and Nutritionists
- Occupational Therapists
- Pharmacists
- Physical Therapists
- Physician Assistants
- Recreational Therapists
- Registered Nurses
- Respiratory Therapists
- Speech-Language Pathologists and Audiologists

HEALTH TECHNOLOGISTS AND TECHNICIANS

- Cardiology Technologists
- Dental Hygienists
- Electrocardiograph (EKG) Technicians
- Emergency Medical Technicians
- Licensed Practical Nurses
- Medical Laboratory Technologists and Technicians
- Medical Records Technicians
- Nuclear Medicine Technologists
- Opticians
- Pharmacy Technicians and Assistants
- Radiologic Technologists and Technicians
- Surgical Technologists and Technicians

HEALTH SERVICE OCCUPATIONS

- Dental Assistants
- Home Health Aides
- Medical Assistants
- Nursing Aides
- Occupational Therapy Assistants and Aides
- Physical Therapy Assistants and Aides

Table 9: Some of the Health-Related Occupations Excluded from Analysis in the Health Care Education Study

BEHAVIORAL HEALTH OCCUPATIONS

- Addiction Counselors
- Alcohol and Substance Abuse Counselors
- Clinical and Counseling Psychologists
- Mental Health Counselors
- Psychiatric Aides
- Psychiatric Nurses
- Psychiatric Technicians
- Psychiatrists
- Social Workers
- Substance Abuse Counselors

BIOMEDICAL RESEARCH OCCUPATIONS

- Biomedical Engineeers
- Biomedical Researchers
- Medical Scientists
- Medical Research Technicians and Technologists

HEALTH CARE ADMINISTRATION OCCUPATIONS

- Health Care Administrators
- Health Information Administrators
- Laboratory Billing Assistants
- Medical Billing Assistants
- Medical Coding Assistants
- Medical Office Assistants
- Medical Secretaries
- Medical Transcriptionists

MISCELLANEOUS HEALTH SERVICE OCCUPATIONS

- Ambulance Drivers and Attendants
- Dental Laboratory Technicians
- Ophthalmic Laboratory Technicians
- Human Service Workers
- Personal and Home Care Aides

PUBLIC HEALTH OCCUPATIONS

- Biostatisticians
- Community Social Workers
- Environmental Scientists and Specialists
- Epidemiologists
- Health Economists
- Health Educators
- Health Policy Analysts
- Health Service Researchers
- Occupational Health and Safety Specialists
- Public Health Nurses
- Toxicologists

VETERINARY MEDICINE OCCUPATIONS

- Veterinarian Assistants and Nonfarm Animal Caretakers
- Veterinarians
- Veterinary Laboratory Assistants

B. HEALTH CARE EMPLOYMENT TRENDS BY OCCUPATION IN NEVADA

This section provides statewide data on 32 health care occupations in Nevada. These occupations are listed in Table 8. The discussion is organized in terms of four broad categories of health care occupations: (1) health diagnosing occupations; (2) health assessment and treatment occupations; (3) health technologists and technicians; and (4) health services occupations. This chapter provides information on projected job growth from 1996 to 2006 and the estimated number of annual job openings in each occupation.[7] This chapter also presents detailed information on selected health care occupations that correspond to existing and proposed health care programs in the UCCSN (e.g., physicians [existing], dentists [proposed]).[8]

Table 9 provides a list of *some* of the types of occupations excluded from the present study. As this list suggests, a number of clearly health-related occupations were excluded from consideration in this report. The decision whether to include or exclude any specific occupation was based on three considerations. First, the short-time frame of the study necessarily limited the range of occupations that could be examined in-depth. For example, the behavioral health occupations listed in Table 9 were excluded because it was felt that they deserved a detailed study in their own right. Second, there was a need to limit analysis to health *care* occupations, per se. Consequently, many occupations clearly related, yet tangential, to the direct provision of health care were excluded (e.g., health care administrators). An attempt was made to include occupations central to the delivery health care in the state. Finally, the existence of comparable occupational level data at both the state and national level influenced the selection of health care occupations incorporated in this study.

1. HEALTH DIAGNOSING OCCUPATIONS

Table 10 presents current and projected employment data on five health diagnosing occupations in Nevada. In general, projected employment growth in health diagnosing occupations is modest. Chiropractors, optometrists, and podiatrists are small occupations in

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[7]The projected number of annual job openings presented for each occupation is not simply the projected number of new jobs over the period 1996 to 2006 divided by ten. Rather, it is a figure that incorporates varying degrees of turnover, retirement, and job change, as well as demand projected for each specific occupation. In the health sector, rising aggregate demand for medical care is largely responsible for the comparatively high number of annual openings in many health care occupations.

[8]A brief job description of each health care occupation discussed in this chapter is contained in Appendix 5. These descriptions provide an overview of work tasks, minimal educational requirements, and average income of each occupation.

Nevada. Each is expected to grow slower than average for all occupations in Nevada and generate less than 20 annual openings through the year 2006. In contrast, the demand for dentists and physicians in Nevada is expected to generate about, respectively, 40 and 140 annual openings through 2006. Two occupations that correspond to existing and proposed health programs in the UCCSN – dentists and physicians – are examined in greater detail below.

Table 10: Health Care Employment in Nevada – Estimated Number Employed in Health Diagnosing Occupations in 1996 and Projected 2006

HEALTH CARE OCCUPATION	NUMBER EMPLOYED		EMPLOYMENT CHANGE 1996-2006		PROJECTED NUMBER OF ANNUAL JOB OPENINGS – 1996 to 2006
	1996	Projected 2006	Number	Percent	
ALL OCCUPATIONS	917,490	1,410,930	493,440	53.78	–
ALL HEALTH CARE OCCUPATIONS	37,425	63,026	25,601	68.41	–
Chiropractors	179	224	45	25.14	Less than 20
Dentists	701	898	197	28.10	40
Optometrists	205	236	31	15.12	Less than 20
Physicians	2,191	3,204	1,013	46.24	140
Podiatrists	38	44	6	15.79	Less than 20

Source: Nevada Department of Employment, Training, and Rehabilitation (1998a, 1998b).

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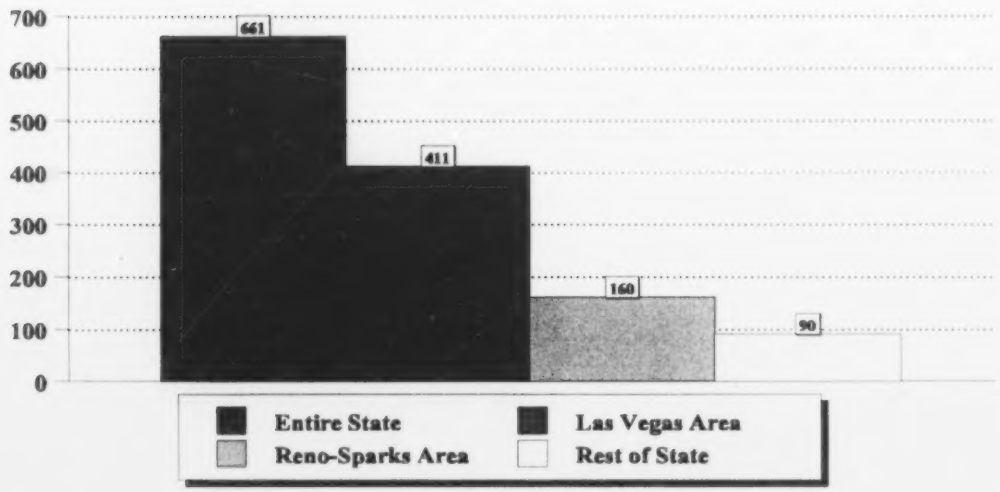
a. Health Diagnosing Occupations: Dentists

Figure 1 provides data on the number of dentists currently practicing in Nevada. According to the State Board of Dental Examiners, there are 661 dentists with an active license who presently reside in the state of Nevada. Of this number, 441 or two-thirds of the dentists with an active license reside in the Las Vegas area. Like many of the data presented in this chapter, the geographic distribution of dentists roughly parallels the distribution of the state's population.[9]

Figure 1: Number of Dentists in Nevada* – 1998



*Number of dentists with an active license from the State of Nevada who reside in the state.

Source: Nevada State Board of Dental Examiners (1998).

[9]This is not to suggest that the distribution of health care personnel parallels the geographic distribution of health care needs in the state. In the case of dentistry, for example, there are a number of federally designated dental health professional shortage areas (HPSA's) – rural and urban – in Nevada. As of July 1, 1996, there were 26 dental designations composed of three entire counties, 22 sub-county service areas, and one population group. Federal criteria for dental HPSA's is a population to dental provider ratio of 4,000:1 or greater (Primary Care Development Center 1996).

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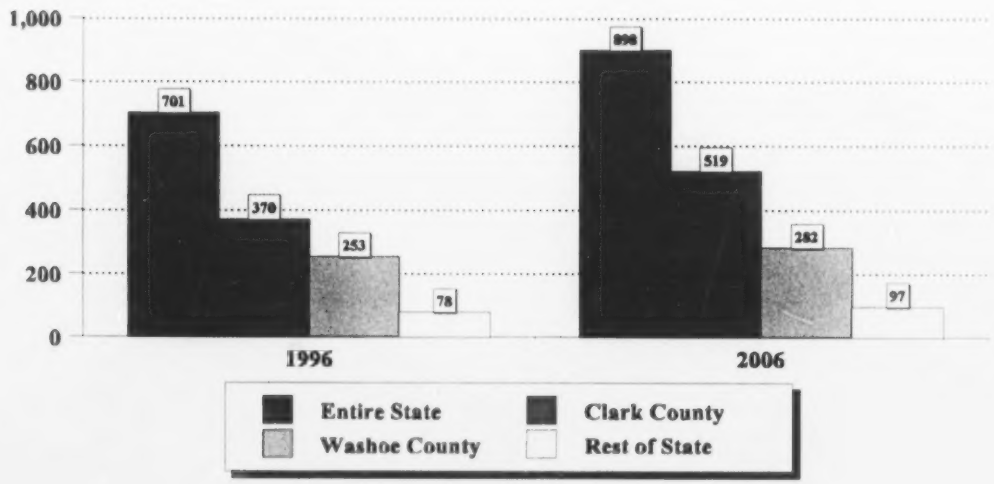
Figure 2[10] provides data on the number of dentists employed in Nevada in 1996 and projected 2006. These data indicate that the number of dentists will grow by an additional 197 or 28% by the year 2006. Over four-fifths of this increase is projected to take place in Clark County alone. Like many health care occupations discussed in this report, data on employment projections possibly underestimate the future demand for dentists in Nevada, since they are unable to factor in changes in public and private policies affecting employment (e.g., the reimbursement of dental services). As such, governmental efforts to expand the coverage of dental services and otherwise improve access to dental services would certainly increase the demand for dentists in the state. On average, demand for dentists will generate approximately 40 annual openings in the state through 2006.

Figure 2: Estimated Employment of Dentists in Nevada – 1996 and Projected 2006



Source: Nevada Department of Employment, Training, and Rehabilitation (1998b).

[10]Figures 1 and 2 highlight discrepancies in the data that complicate an accurate assessment of health workforce supply and demand. Neither data source provides a precise measure of the number of dentists employed at any specific point in time. Like all of the data presented in this chapter, these figures should be interpreted with caution.

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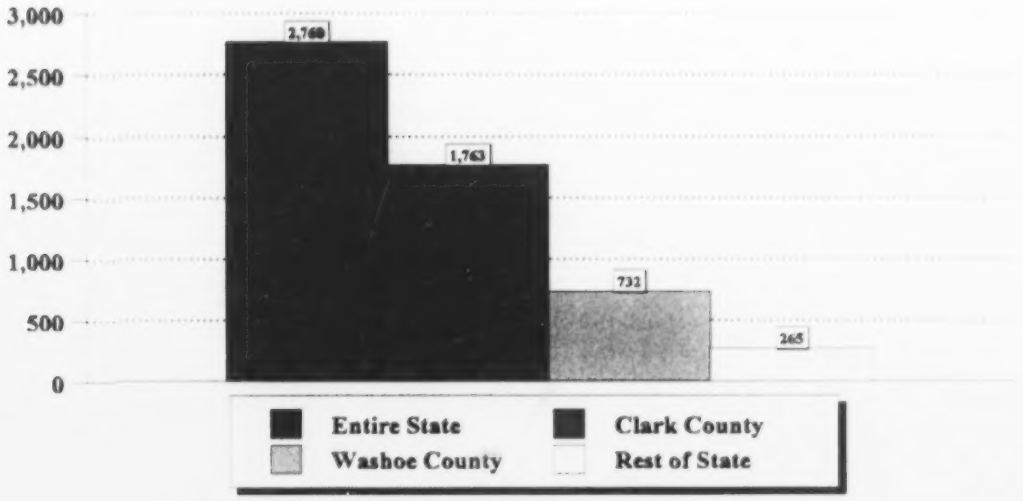
b. Health Diagnosing Occupations: Physicians

Figures 3 through 8 present detailed data on employment trends for physicians in the State of Nevada. Unlike the nation as a whole, data for Nevada indicate substantial employment growth for physicians through the first decade of the next century. Figure 3 indicates the number and distribution of licensed physicians actively practicing in the state. In 1997, there were approximately 2,760 physicians licensed by the state who are actively practicing in the state – two-thirds of which practice in Clark County.

Figure 3: Number of Physicians in Nevada* – 1997



*Number of physicians licensed by the State of Nevada who are actively practicing in the state.

Source: Nevada State Board of Medical Examiners (1998).

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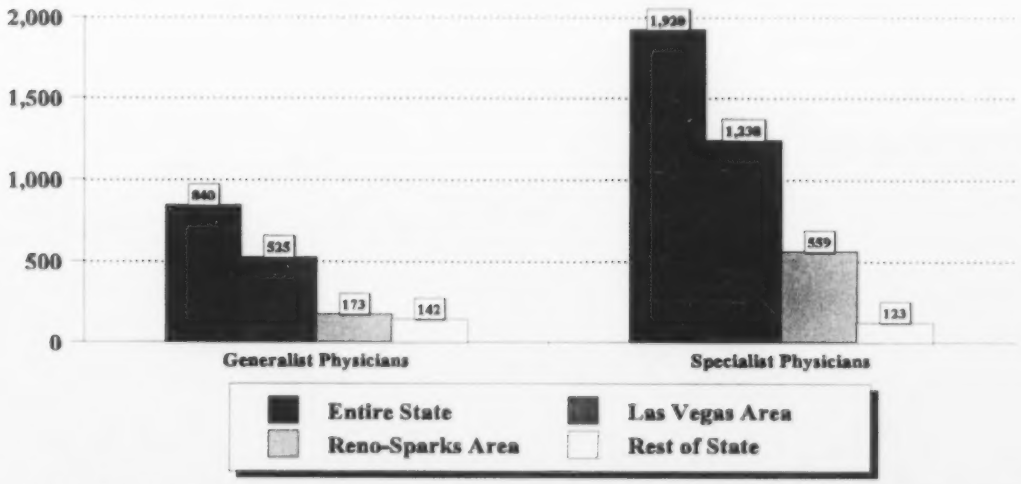
Figure 4 provides a breakdown of the same data in terms of the number of generalist and specialist physicians practicing in the state in 1997. This figure highlights two important features of the supply of physicians in Nevada – the geographic and specialty maldistribution of physicians in the state. That is to say, Nevada is characterized by an imbalance between generalists (too few) and specialists (too many) vis-a-vis the primary health care needs of the state indicated in most health care needs assessments. Second, the state is characterized by shortages of primary health care providers in rural counties (i.e., "the rest of the state" in this and other figures presented in this report) vis-a-vis the health care needs of rural areas of the state.

Figure 4: Number of Generalist and Specialist Physicians in Nevada* – 1997



*Number of physicians licensed by the State of Nevada who are actively practicing in the state. Generalist physicians include those in family/general practice, general internal medicine, and general pediatrics. Specialist physicians refer to those in all other medical and surgical specialties and subspecialties.

Source: Nevada State Board of Medical Examiners (1998).

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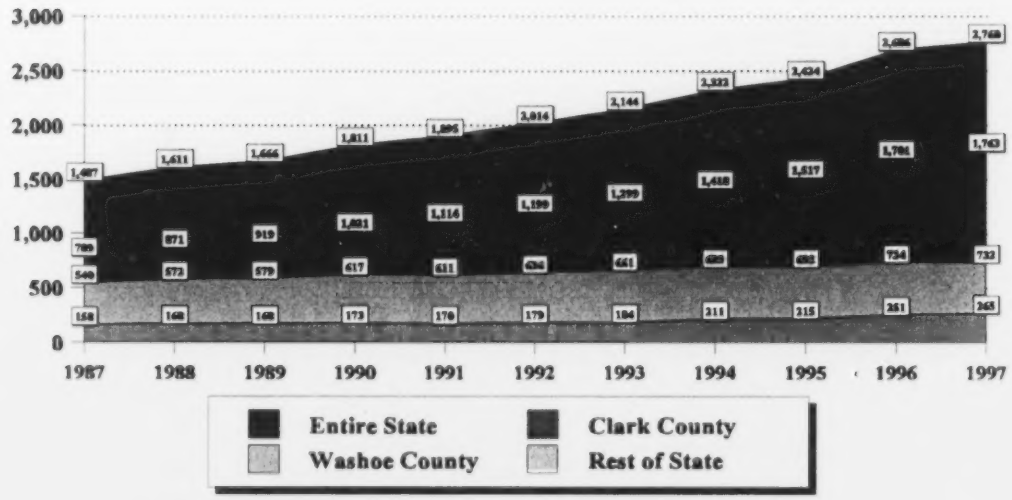
Figure 5 charts employment change among Nevadan physicians from 1987 to 1997. During this time period the number of physicians licensed by the state who are actively practicing in Nevada has steadily increased. This figure highlights the growing percentage of physicians practicing in Clark County. From 1987 to 1997, the percentage of physicians licensed by the state who practice in Clark County rose from 53% to 64%. Over the same period, the percentage of those practicing in Washoe County declined from 36% to 27%, as did the percentage of physicians in the rest of the state which declined from 11% to 9%.

Figure 5: Number of Physicians in Nevada* – 1987 to 1997



*Number of physicians licensed by the State of Nevada who are actively practicing in the state.

Source: Nevada State Board of Medical Examiners (1998).

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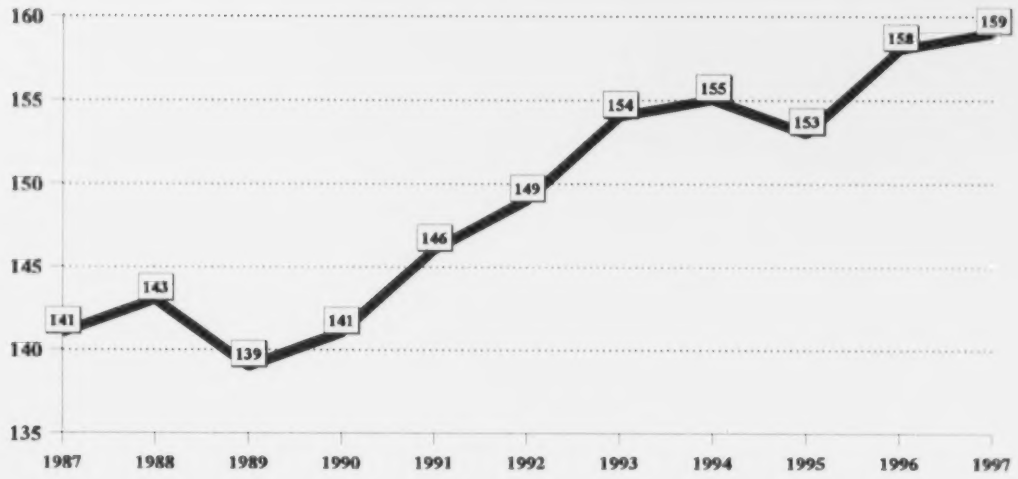
While the number of physicians licensed by the state has grown steadily over the past decade, Figure 6 indicates that the supply of physicians has barely kept pace with population growth in the state. Since 1990, the state's population has grown by nearly 45%, while the ratio of physicians per 100,000 population increased by a modest 13% from 141 to 159 physicians per 100,000. Moreover, the current number of 159 physicians per 100,000 residents in Nevada is well below the national average of approximately 250 physicians per 100,000 population.

Figure 6: Ratio of Physicians per 100,000 Population in Nevada* – 1987 to 1997



*Number of physicians licensed by the State of Nevada who are actively practicing in the state.

Source: Nevada State Board of Medical Examiners (1998).

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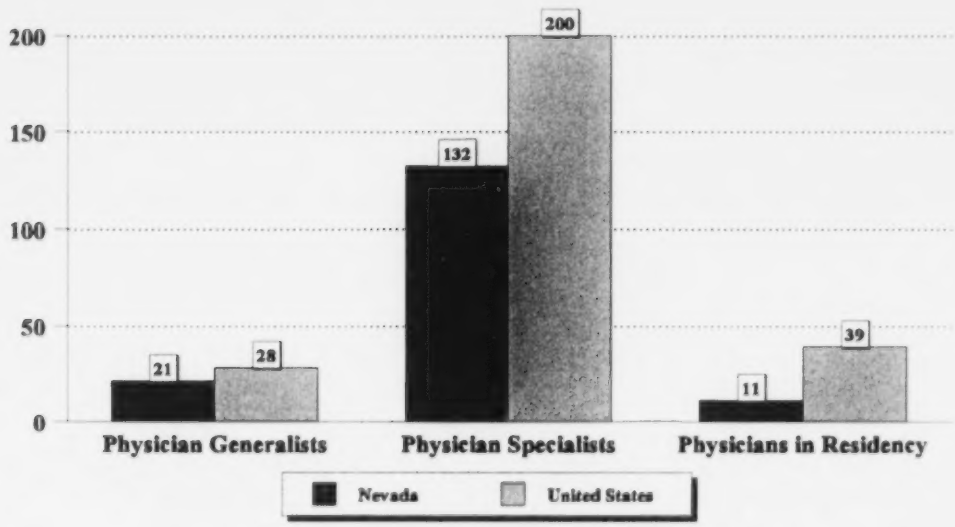
Figure 7 presents comparative data on the number of physician generalists, physician specialists, and physicians in residency in Nevada and the United States. In 1995, the number of physicians per 100,000 population in Nevada was below the national average on each of these major indicators of physician supply. These data highlight the exceptional nature of health care employment trends in Nevada as compared to the rest of the United States. Most studies of the physician workforce have concluded that the US has an oversupply of physicians; that is to say, a surplus of most non-primary health care specialists and a shortage of primary care generalists (e.g., Institute of Medicine 1996). Figure 7 indicates that, by any measure, the number of physicians is in short supply in Nevada.

Figure 7: Number of Physicians per 100,000 Population in Nevada and the United States – 1995



Source: Public Policy Institute, AARP (1997).

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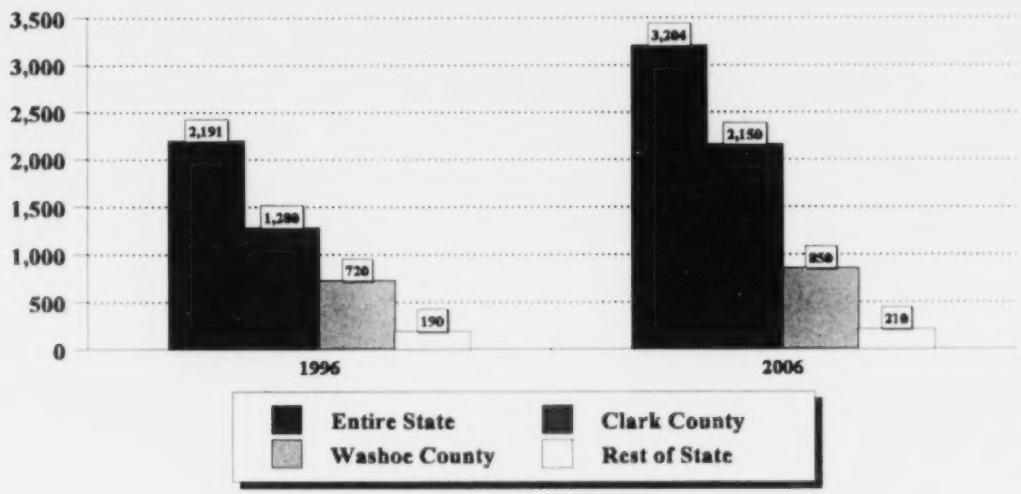
Finally, Figure 8 presents projected employment for physicians in Nevada. The employment of physicians is projected to grow about as fast as the average for all occupations in the state. The number of physician jobs will increase to approximately 3,204 jobs by the year 2006. On average, population growth and the increasing demand for medical services will generate 140 annual openings for physicians in the state. Figure 8 also highlights regional changes in employment. By the year 2006, two-thirds or approximately 67% of the state's physicians will be employed in Clark County.

Figure 8: Estimated Employment of Physicians in Nevada – 1996 and Projected 2006



Source: Nevada Department of Employment, Training, and Rehabilitation (1998).

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2. HEALTH ASSESSMENT AND TREATMENT OCCUPATIONS

Table 11 provides data on statewide employment trends in nine categories of health assessment and treatment occupations in Nevada from 1996 to projected 2006. In general, projected employment growth in each of these occupations exceeds the average projected growth for all occupations and all health care occupations in Nevada. In addition, the projected growth for *every* occupation listed in Table 11 exceeds national projections for the same occupational categories. Each of the occupations listed in Table 11 is discussed in greater detail below.

Table 11: Health Care Employment in Nevada – Estimated Number Employed in Health Assessment and Treatment Occupations in 1996 and Projected 2006

HEALTH CARE OCCUPATION	NUMBER EMPLOYED		EMPLOYMENT CHANGE 1996-2006		PROJECTED NUMBER OF ANNUAL JOB OPENINGS – 1996 to 2006
	1996	Projected 2006	Number	Percent	
ALL OCCUPATIONS	917,490	1,410,930	493,440	53.78	–
ALL HEALTH CARE OCCUPATIONS	37,425	63,026	25,601	68.41	–
Dietitians and Nutritionists	191	292	101	52.88	Less than 20
Occupational Therapists	233	506	273	117.17	30
Pharmacists	955	1,815	860	90.05	110
Physical Therapists	700	1,418	718	102.57	80
Physician Assistants	104	186	82	78.85	Less than 20
Recreational Therapists	85	148	63	74.12	Less than 20
Registered Nurses	9,983	16,660	6,677	66.88	760
Respiratory Therapists	372	808	436	117.20	50
Speech-Language Pathologists and Audiologists	394	696	302	76.65	30

Source: Nevada Department of Employment, Training, and Rehabilitation (1998a, 1998b).

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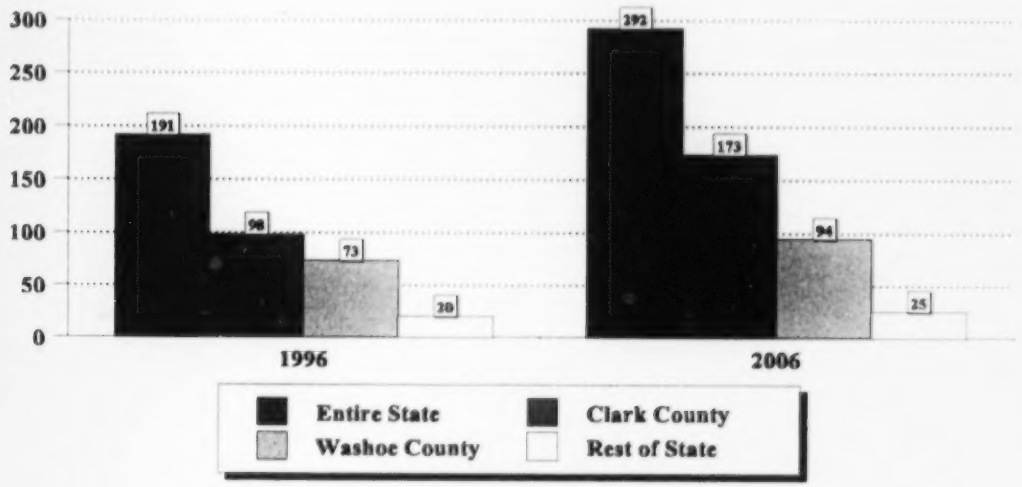
a. Health Assessment and Treatment Occupations: Dietitians and Nutritionists

Figure 9 presents employment data on dietitians and nutritionists in Nevada. Dietitians and nutritionists represent a numerically small occupation in Nevada that presently employs approximately 200 individuals in the state. As Figure 9 indicates, the employment of dietitians and nutritionists is projected to grow about as fast as the average for all occupations in Nevada, increasing to about 292 jobs by the year 2006. On average, demand for dietitians and nutritionists will generate less than 20 job openings per year in Nevada through 2006.

Figure 9: Estimated Employment of Dietitians and Nutritionists in Nevada – 1996 and Projected 2006



Source: Nevada Department of Employment, Training, and Rehabilitation (1998b).

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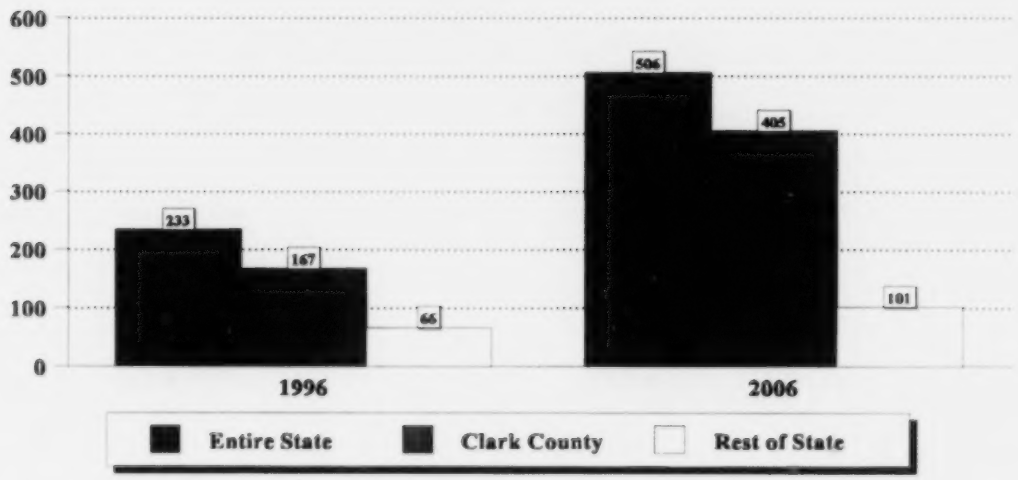
b. Health Assessment and Treatment Occupations: Occupational Therapists

Figure 10 provides information on the current and projected number of occupational therapists employed in Nevada. As is the case with employment in physical and respiratory therapy, statewide employment in occupational therapy is projected to double through the year 2006. While occupational therapy is a numerically small profession, employment of occupational therapists is expected to increase faster than average for all occupations in the state, rising to approximately 506 jobs in 2006 with the greatest amount of growth taking place in the Las Vegas area. The growing number of middle-aged and elderly individuals that require therapeutic services is fueling the growing demand for occupational therapists. On average, demand for occupational therapists is expected to generate about 30 additional job openings in Nevada.[11]

Figure 10: Estimated Employment of Occupational Therapists in Nevada – 1996 and Projected 2006



Source: Nevada Department of Employment, Training, and Rehabilitation (1998b).

[11]According to the State of Nevada Board of Occupational Therapy (1998), there are presently 239 occupational therapists licensed by the state who reside in the state. Thus, the estimates produced by DETR appear to overestimate the number of employed OT's. It is equally possible that occupational therapists in the state hold multiple jobs. Nonetheless, the projected data provide a good gauge of the direction and magnitude of employment growth in this occupation.

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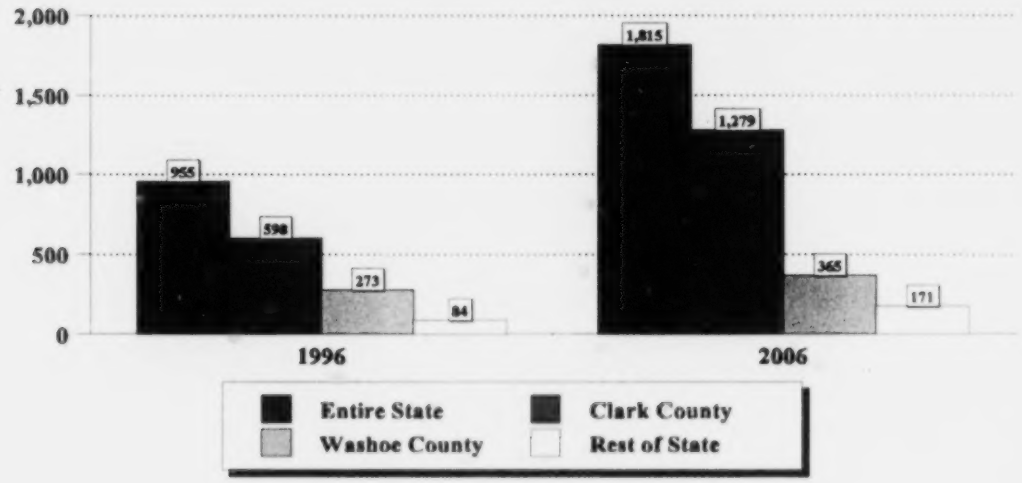
c. Health Assessment and Treatment Occupations: Pharmacists

Figure 11 presents estimates of the employment of pharmacists in Nevada from 1996 to 2006. The employment of pharmacists is projected to grow much faster than the average for all occupations in the state, increasing to approximately 1,815 jobs by the year 2006. Employment growth will continue to be driven by the increased pharmaceutical needs of rapidly growing and aging population in Nevada. Demand for pharmacists will generate approximately 110 annual openings in the state through the year 2006.

Figure 11: Estimated Employment of Pharmacists in Nevada – 1996 and Projected 2006



Source: Nevada Department of Employment, Training, and Rehabilitation (1998b).

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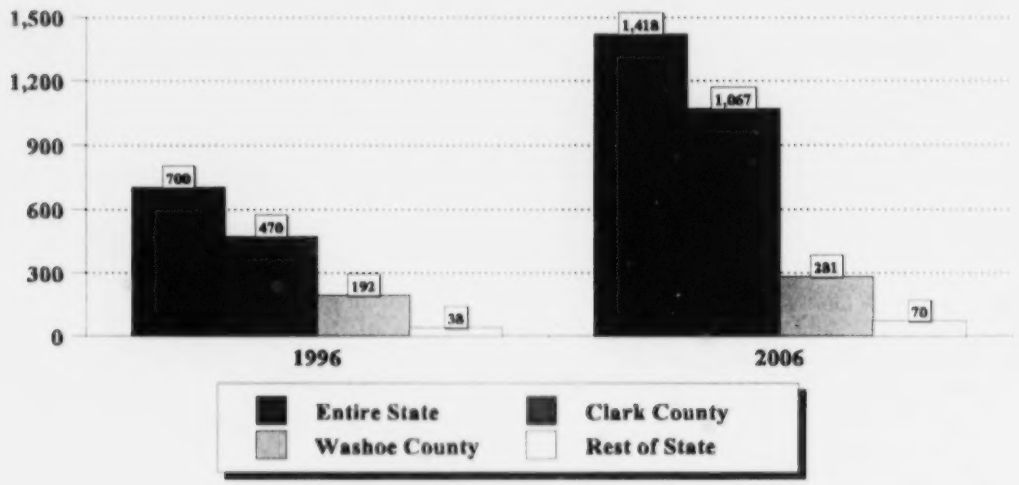
d. Health Assessment and Treatment Occupations: Physical Therapists

Figure 12 provides information on the current and projected number of physical therapists employed in Nevada. The employment of physical therapists in Nevada is projected to grow much faster than the average for all occupations in the state. Employment will increase to approximately 1,418 jobs or by 103% by the year 2006. Projected employment growth in Clark County is nearly 600 jobs or by 127% through 2006. The growing number of individuals with disabilities or limited function is increasing the demand for physical therapy services. On average, demand for physical therapists will generate approximately 80 annual openings in the state.

Figure 12: Estimated Employment of Physical Therapists in Nevada – 1996 and Projected 2006



Source: Nevada Department of Employment, Training, and Rehabilitation (1998b).

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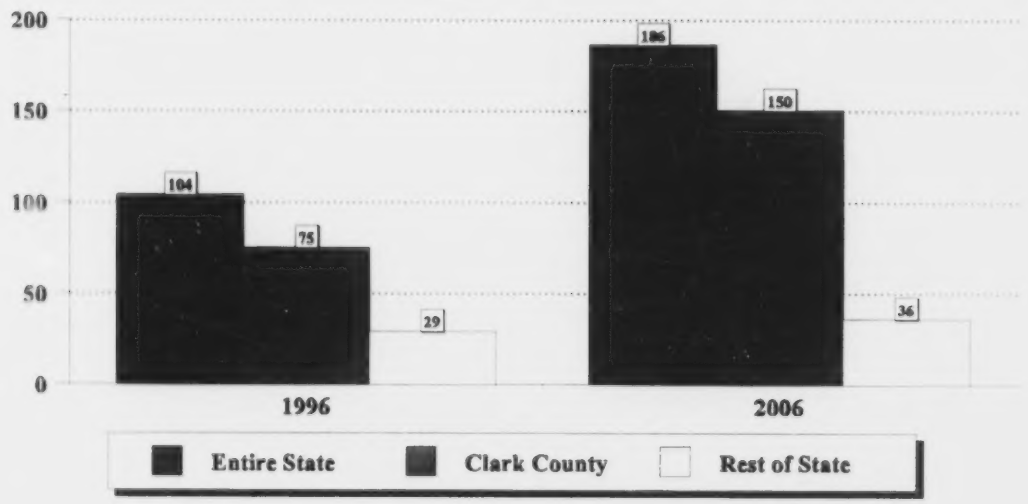
e. Health Assessment and Treatment Occupations: Physician Assistants

Figure 13 presents employment estimates for physician assistants (PA's) in Nevada from 1996 to 2006. Physician assistants represent a very small occupation in Nevada. According to the State Board of Medical Examiners, there are currently 126 physician assistants licensed by the State of Nevada who reside in the state. While the employment of physician assistants is projected to grow faster than the average for all occupations in the state, demand for PA's will generate less than 20 annual openings per year. Employment opportunities for PA's will be greatest in Las Vegas, where the number of jobs is projected to double from 75 in 1996 to 150 in 150 in 2006. Nationally, the employment prospects of physician assistants are considerably better. In fact, the number of jobs for PA's is expected to grow faster than average for all occupations in the US. Driving employment growth for PA's is the increasing number of clinics and institutions who employ PA's to provide some primary health care and assist physicians. Employment growth is also being driven by rural and inner city clinics that have difficulty recruiting physicians and other primary health care providers.

Figure 13: Estimated Employment of Physician Assistants in Nevada – 1996 and Projected 2006



Source: Nevada Department of Employment, Training, and Rehabilitation (1998b).

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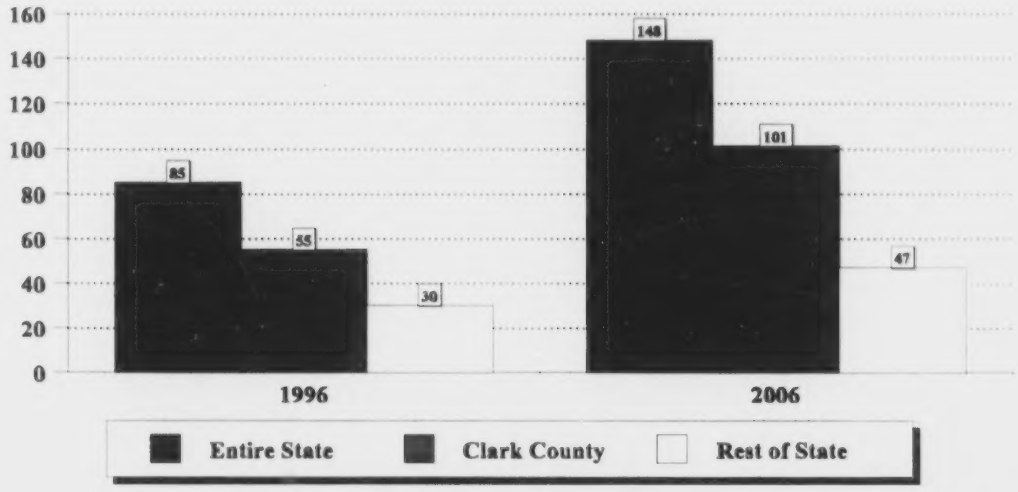
f. Health Assessment and Treatment Occupations: Recreational Therapists

Figure 14 presents employment data for recreational therapists in the state. Recreational therapy is a small occupation in Nevada with a current employment of approximately 90 jobs in the state. The employment of recreational therapists is expected to grow faster than the average for all occupations in Nevada, increasing to approximately 150 jobs by the year 2006. The increasing demand for long-term care, physical and psychiatric rehabilitative services, and services for those with disabilities is fueling the modest projected growth for recreational therapists in the state. Changing reimbursement patterns in any of these health services could affect the employment prospects of recreational therapists in Nevada. However, recreational therapy is a very small occupation that will generate less than 20 annual job openings through the year 2006.

Figure 14: Estimated Employment of Recreational Therapists in Nevada – 1996 and Projected 2006



Source: Nevada Department of Employment, Training, and Rehabilitation (1998b).

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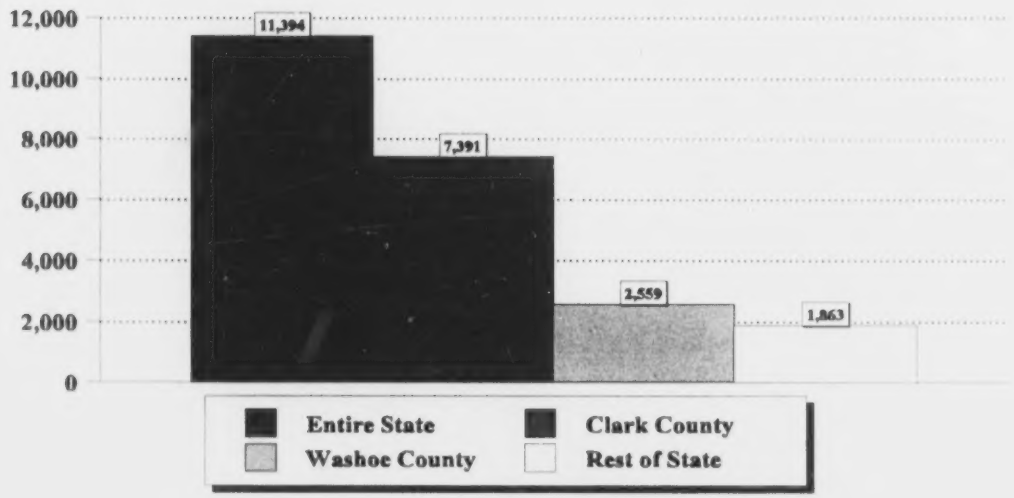
g. Health Assessment and Treatment Occupations: Registered Nurses

Registered nurses (RN's) represent the largest health care occupation in Nevada with approximately 11,000 jobs and the largest health care occupation in the United States with 1.9 million jobs. Figure 15 highlights the current distribution of licensed RN's in the state. According to the Nevada State Board of Nursing (1998), there are 11,394 RN's licensed by the State of Nevada with 65% residing in Clark County, 23% in Washoe County, and 12% in the balance of the state.[12]

Figure 15: Number of Registered Nurses in Nevada* – 1998



*Number of registered nurses licensed by the State of Nevada.

Source: Nevada State Board of Nursing (1998).

[12]Comparable state and national data on the employment of advanced practitioners of nursing does not exist. However, changes in the health care sector are increasing the demand for nurse practitioners to provide a greater portion of primary health care in a wide range of clinical settings (see the previous chapter). According to the Nevada State Board of Nursing, there are only 251 advanced practitioners of nursing (or 2.2% of licensed RN's) licensed by the state to provide basic primary health care in Nevada.

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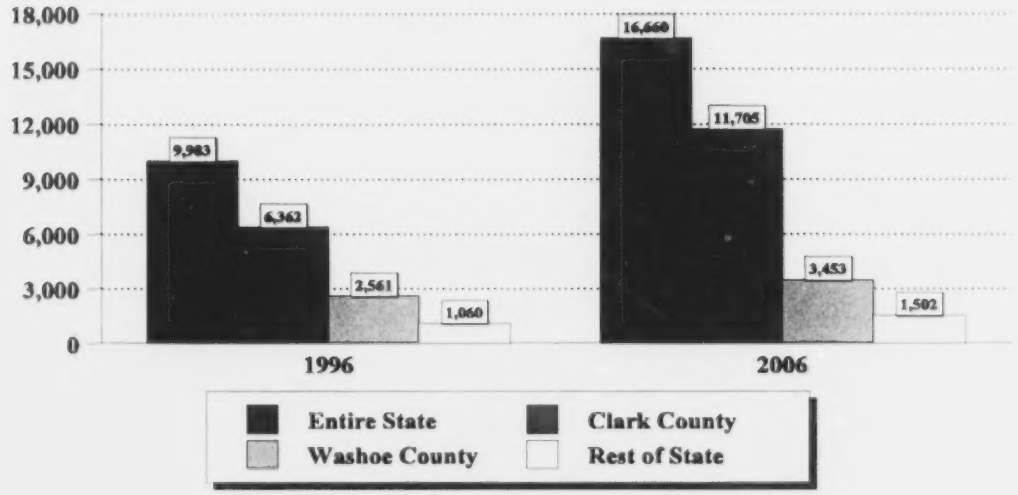
Figure 16 provides information on the current and projected number of registered nurses employed in Nevada. The employment of registered nurses in Nevada is projected to grow about as fast as the average for all occupations in the state. However, because the occupation is large, projected employment growth will be considerable, rising to approximately 16,660 jobs by the year 2006. Employment growth will be greatest in Clark County, where the number of jobs will rise by 84% or over 5,000 jobs. Increasing demand for registered nurses is being driven by a number of factors including the increasing emphasis on primary care, the growing demand for long-term and home-health services, and proportionately greater medical needs of an aging population. On average, the demand for registered nurses will generate approximately 760 annual openings in Nevada through 2006.

Figure 16: Estimated Employment of Registered Nurses in Nevada – 1996 and Projected 2006



Source: Nevada Department of Employment, Training, and Rehabilitation (1998b).

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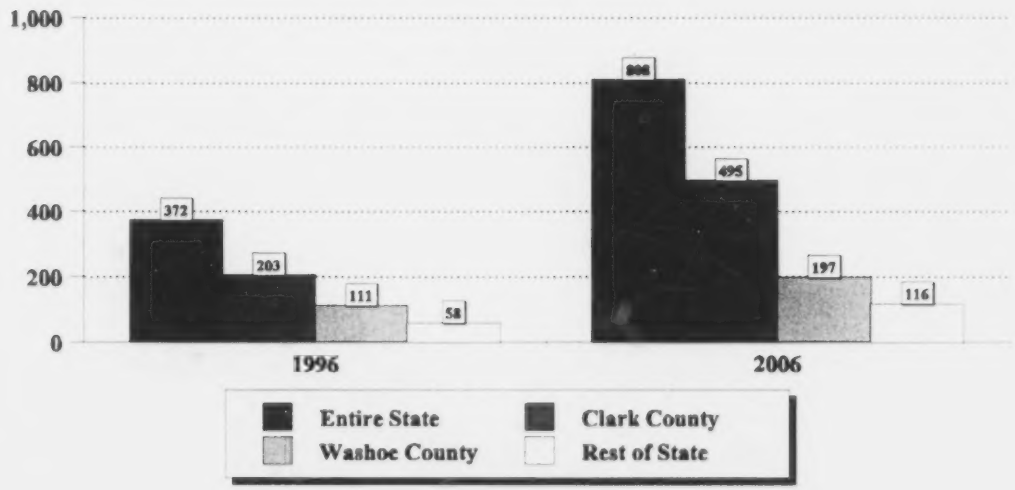
h. Health Assessment and Treatment Occupations: Respiratory Therapists

Figure 17 present employment data on respiratory therapists in Nevada from 1996 to 2006. Respiratory therapy is a comparatively small occupation in Nevada that presently consists of about 430 jobs. The employment of respiratory therapists is projected to grow much faster than all other occupations in Nevada, increasing by nearly 120% or by 436 jobs through the year 2006. Projected employment growth will be greatest in Clark County (+144%) and the rural counties of Nevada (+100%). Factors fueling the increasing demand for respiratory therapists include the growing general need for respiratory health care services by the state's middle-aged and elderly populations and the relative rise of cardiopulmonary disease incidence in Nevada. On average, demand for respiratory therapists will generate 50 annual openings in the state.

Figure 17: Estimated Employment of Respiratory Therapists in Nevada – 1996 and Projected 2006



Source: Nevada Department of Employment, Training, and Rehabilitation (1998).

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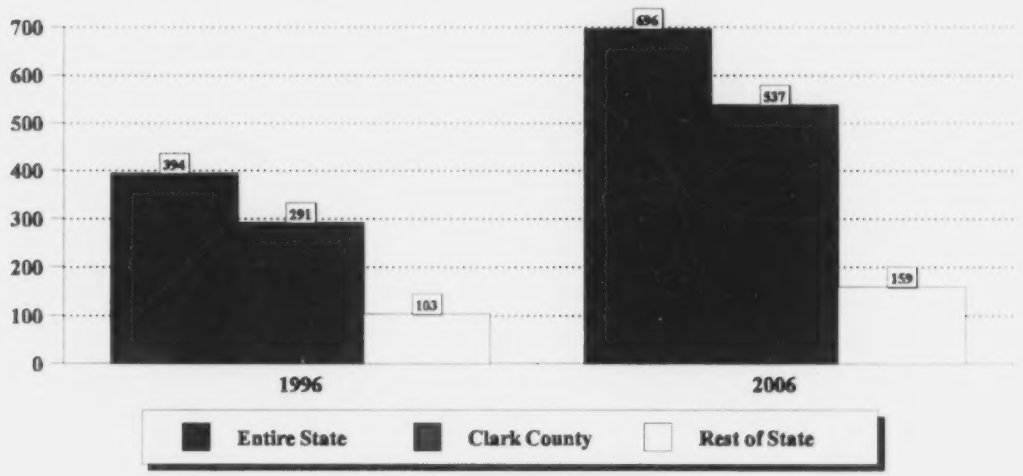
i. Health Assessment and Treatment Occupations: Speech-Language Pathologists and Audiologists

According to the Nevada State Board of Examiners for Audiology and Speech Pathology (1998), there are 258 speech-language pathologists and 54 audiologists licensed by the State of Nevada who presently reside in the state. Figure 18 presents data on the projected employment of speech-language pathologists and audiologists in Nevada.[13] Statewide employment of speech-language pathologists and audiologists is projected to grow by approximately 300 jobs or 75% through the year 2006. Demand for speech-language pathologists and audiologists is being driven by advances in medical technology which permit the early and accurate diagnosis of hearing problems and the rising incidence of those with hearing impairments associated with the growth in the elderly population. Demand for this occupation will generate approximately 30 annual openings in Nevada through 2006.

Figure 18: Estimated Employment of Speech-Language Pathologists and Audiologists in Nevada – 1996 and Projected 2006



Source: Nevada Department of Employment, Training, and Rehabilitation (1998b).

[13]Unfortunately, most data collected and published on these distinct occupations are typically collapsed.

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3. HEALTH TECHNOLOGISTS AND TECHNICIANS

Table 12 summarizes health care employment trends in twelve health care technology and technical occupations in Nevada. Nine of the occupations listed Table 9 are projected to grow faster than the average for all occupations in the state through the year 2006. In addition, a number of these occupations are projecting substantial numerical employment growth. Six of these occupations are projected add 500 or more jobs through the year 2006. In general, the overall rising demand for health services, the sophistication of medical technology and practice, and pressures to contain costs through the substitution of lower-payed labor are driving employment growth in this diverse set of occupations. Eight occupations that correspond to existing and proposed health programs in the UCCSN are discussed in greater detail below.

Table 12: Health Care Employment in Nevada – Estimated Number Employed in Health Technologists and Technicians Occupations in 1996 and Projected 2006

HEALTH CARE OCCUPATION	NUMBER EMPLOYED		EMPLOYMENT CHANGE 1996-2006		PROJECTED NUMBER OF ANNUAL JOB OPENINGS – 1996 to 2006
	1996	Projected 2006	Number	Percent	
ALL OCCUPATIONS	917,490	1,410,930	493,440	53.78	–
ALL HEALTH CARE OCCUPATIONS	37,425	63,026	25,601	68.41	–
Cardiology Technologists	80	180	100	125.00	Less than 20
Dental Hygienists	894	1,687	793	88.70	110
Electrocardiograph (EKG) Technicians	143	158	15	10.49	20
Emergency Medical Technicians	666	1,351	685	102.85	90
Licensed Practical Nurses	2,781	4,260	1,479	53.18	200
Medical Laboratory Technologists/Technicians	1,722	2,890	1,168	67.83	120
Medical Records Technicians	583	1,129	546	93.65	70
Nuclear Medicine Technologists	65	112	47	72.31	Less than 20
Opticians	353	508	155	43.91	30
Pharmacy Technicians and Assistants	288	452	164	56.94	60
Radiologic Technologists and Technicians	917	1,680	763	83.21	90
Surgical Technologists and Technicians	273	509	236	86.45	30

Source: Nevada Department of Employment, Training, and Rehabilitation (1998a, 1998b).

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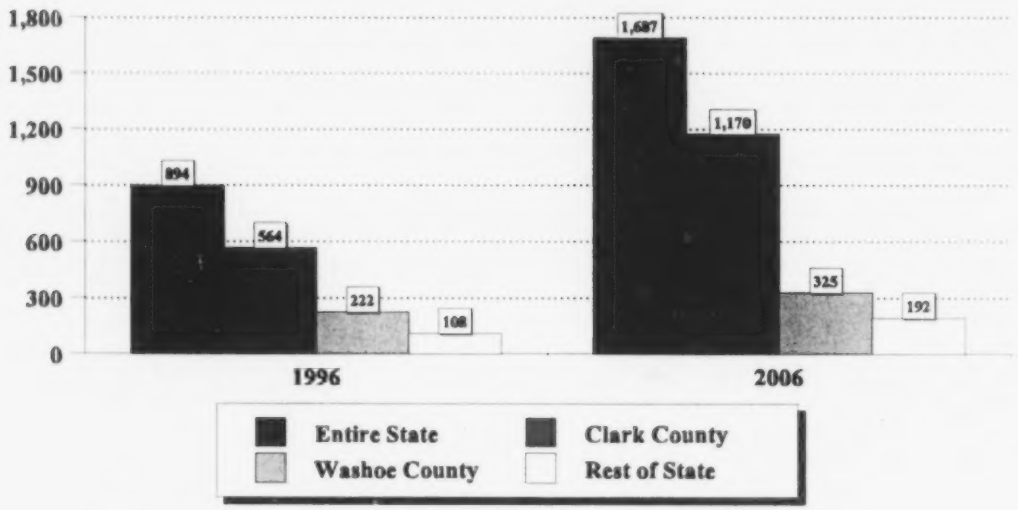
a. Health Technologists and Technicians: Dental Hygienists

Figure 19 provides data on employment projections for dental hygienists in Nevada. Presently, there are 1,010 jobs in this occupation in the state.[14] The employment of dental hygienists is projected to grow much faster than the average for all occupations in the state, rising to approximately 1,687 jobs through the year 2006. Employment growth will be greatest in the Las Vegas area, where the number of jobs is projected to double from an estimated 564 to 1,170 jobs from 1996 to 2006. Increasing overall demand for dental services and the substitution of work previously performed by dentists are factors driving the demand for more dental hygienists throughout Nevada. Demand for dental hygienists will generate approximately 110 annual openings in the state.

Figure 19: Estimated Employment of Dental Hygienists in Nevada – 1996 and Projected 2006



Source: Nevada Department of Employment, Training, and Rehabilitation (1998b).

[14] According to the Nevada Dental Hygienists' Association (1997), there were 785 dental hygienists licensed to practice in Nevada in 1997. A substantial number of dental hygienists hold one or more jobs, thus accounting for the large differences in licensees and estimated number of jobs.

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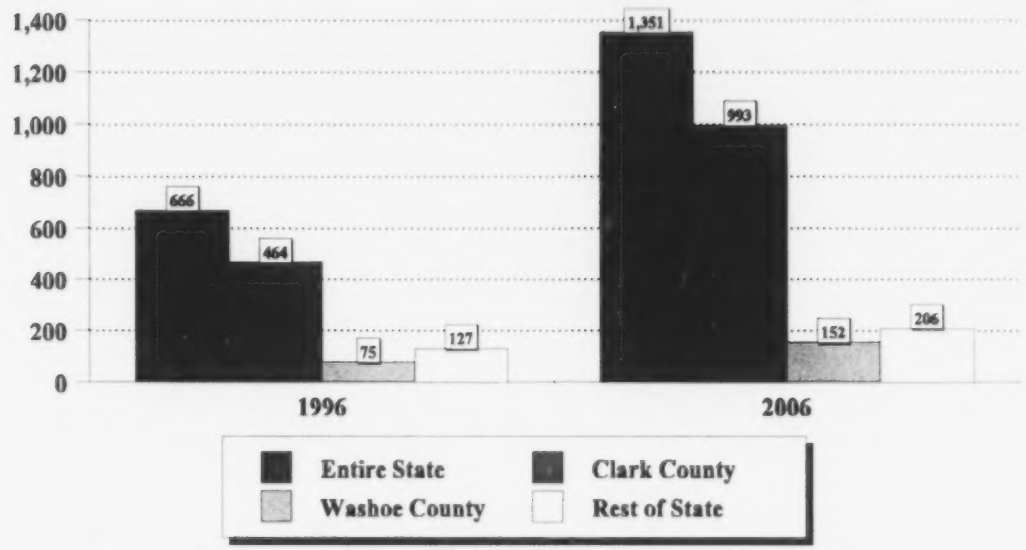
b. Health Technologists and Technicians: Emergency Medical Technicians

Figure 20 presents information on the estimated employment of emergency medical technicians (EMT's) in Nevada. Emergency medical technicians represent a small occupation in Nevada that is projected to grow much faster than the average for all occupations in the state. The number of EMT's is projected to double in both Clark County (from an estimated 446 to 993 jobs) and Washoe County (75 to 152 jobs) through the year 2006. A key factor driving increased demand for emergency medical technicians is the transition from volunteer to paid positions in the field of emergency and paramedic medicine. On average, demand for credentialed EMT's will generate approximately 90 annual openings in Nevada through 2006.

Figure 20: Estimated Employment of Emergency Medical Technicians in Nevada – 1996 and Projected 2006



Source: Nevada Department of Employment, Training, and Rehabilitation (1998b).

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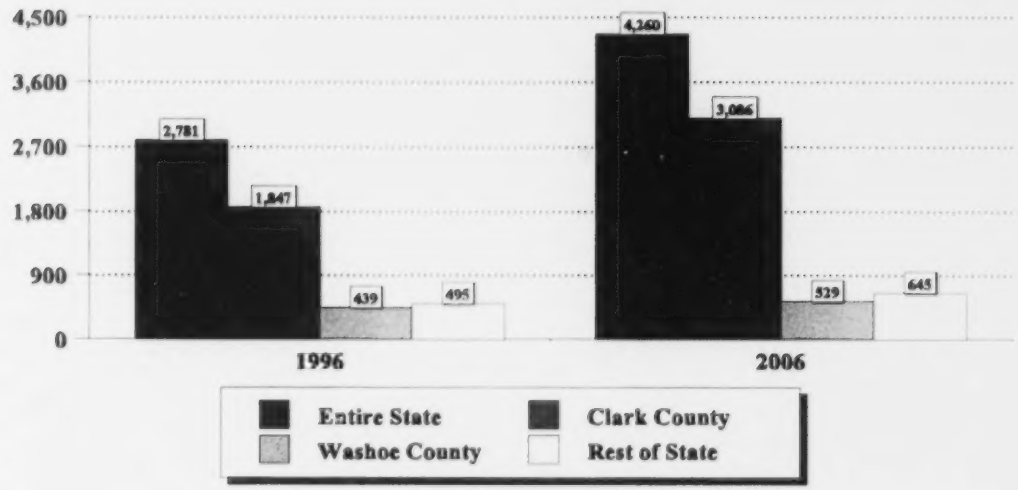
c. Health Technologists and Technicians: Licensed Practical Nurses

Figure 21 presents data on the employment of licensed practical nurses (LPN's) in Nevada The employment of licensed practical nurses is expected to grow about as fast as the average for all occupations in the state, increasing by nearly 1,500 jobs or 53% from 1996 to 2006. An estimated 3,000 jobs presently exist in this occupation. Employment growth for this occupation is being fueled by the long-term care needs of a growing population of very old people (nursing homes will offer the most new jobs for LPN's) and the general growth of health care in the state. Demand for licensed practical nurses will generate approximately 200 annual openings in Nevada through 2006.

Figure 21: Estimated Employment of Licensed Practical Nurses in Nevada – 1996 and Projected 2006



Source: Nevada Department of Employment, Training, and Rehabilitation (1998b).

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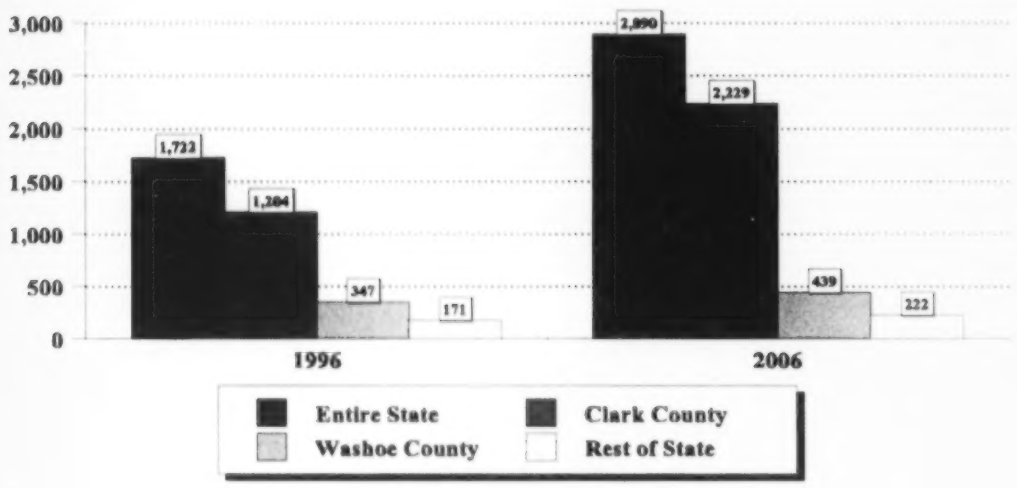
d. Health Technologists and Technicians: Medical Laboratory Technologists and Technicians

Figure 22 provides data on employment trends for medical laboratory technologists and technicians in Nevada.[15] The employment of medical laboratory technologists and technicians is projected to grow about as fast as all occupations in the state, increasing by about 1,168 jobs or 68% through the year 2006. Nearly, 90% of this growth is projected to occur in Clark County. The development of new types of medical tests and the growing volume of laboratory tests in medical practice are some of the major factors driving increased demand for this occupation. On average, demand for medical laboratory technologists and technicians will generate approximately 120 annual openings in this occupation in Nevada.

Figure 22: Estimated Employment of Medical Laboratory Technologists and Technicians in Nevada – 1996 and Projected 2006



Source: Nevada Department of Employment, Training, and Rehabilitation (1998b).

[15]This occupation is actually a category of diverse occupations that include technologists typically requiring a baccalaureate degree and technical jobs requiring an associate degree or post-secondary certification.

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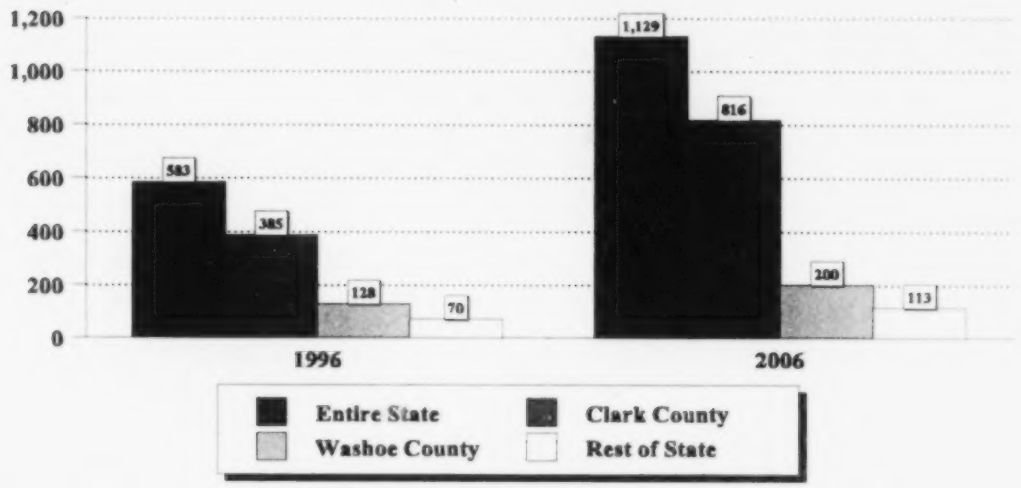
e. Health Technologists and Technicians: Medical Records Technicians

Figure 23 provides employment data for medical records technicians (a.k.a. health information technologists) in Nevada. The employment of medical records technicians is expected to grow much faster than the average for all occupations in the state, increasing by approximately 546 jobs or 94% from 1996 to 2006. Nearly 80% of new job growth will occur in Clark County. Most medical record technicians will be employed in hospitals, though employment growth is increasing in physicians' offices, home health agencies, and nursing homes. Factors driving employment growth of this occupation include the rapid increase of medical tests, procedures, and medical record-keeping which, in turn, will be increasingly scrutinized by third-party payers, regulators, courts, and consumers. Demand for medical records technicians will generate approximately 70 annual openings in the state through 2006.

Figure 23: Estimated Employment of Medical Records Technicians in Nevada – 1996 and Projected 2006



Source: Nevada Department of Employment, Training, and Rehabilitation (1998b).

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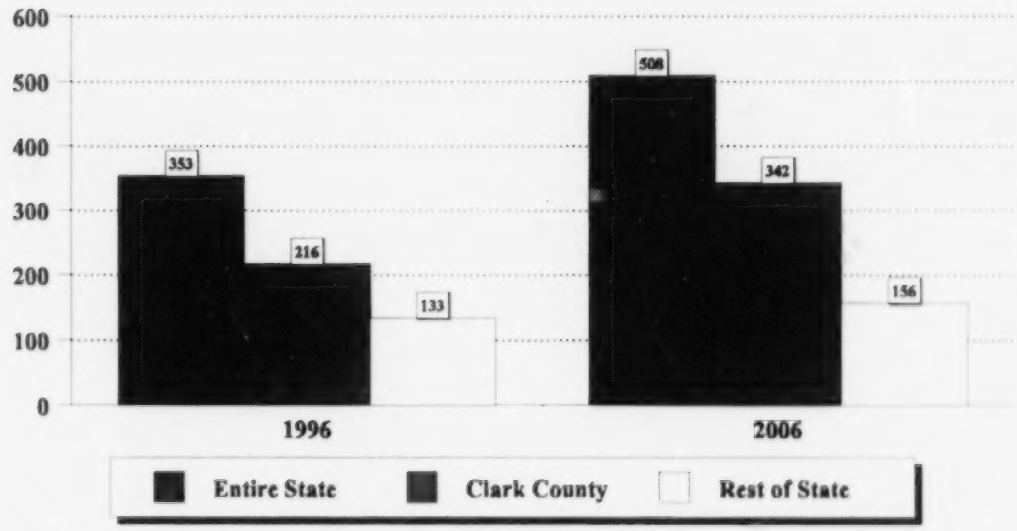
f. Health Technologists and Technicians: Opticians

Figure 24 provides employment data for opticians in Nevada through the year 2006. Opticians represent a small occupation in Nevada that is expected to grow about as fast as the average for all occupations in the state through the year 2006.[16] Statewide employment of opticians is projected to increase by 115 jobs from 1996 to 2006, rising to approximately 508 jobs. The modest projected job growth is a product of the growing demand for corrective lenses among an increasingly middle-aged and older population in the state. On average, demand for opticians will generate approximately 30 annual job openings in Nevada through the year 2006.

Figure 24: Estimated Employment of Opticians in Nevada – 1996 and Projected 2006



Source: Nevada Department of Employment, Training, and Rehabilitation (1998b).

[16] "Opticians" is an occupational category used by state and federal agencies that includes dispensing opticians and ophthalmic laboratory technicians. Analyzed separately, the employment of dispensing opticians is projected to increase faster than the average for all occupations in the state.

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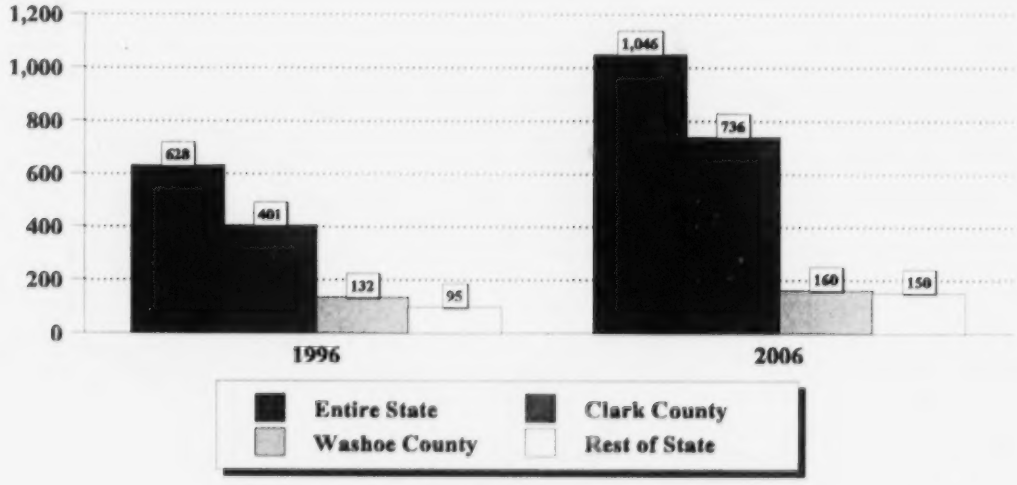
g. Health Technologists and Technicians: Pharmacy Technicians and Assistants

Figure 25 presents estimated employment data for pharmacy technicians and assistants in Nevada. The employment of pharmacy technicians and assistants is projected to grow faster than the average for all occupations in Nevada, increasing by approximately 420 jobs or 67% through the year 2006. Demand for pharmacy technicians and assistants will generate approximately 60 annual job openings in Nevada through 2006.

Figure 25: Estimated Employment of Pharmacy Technicians and Assistants in Nevada– 1996 and Projected 2006



Source: Nevada Department of Employment, Training, and Rehabilitation (1998b).

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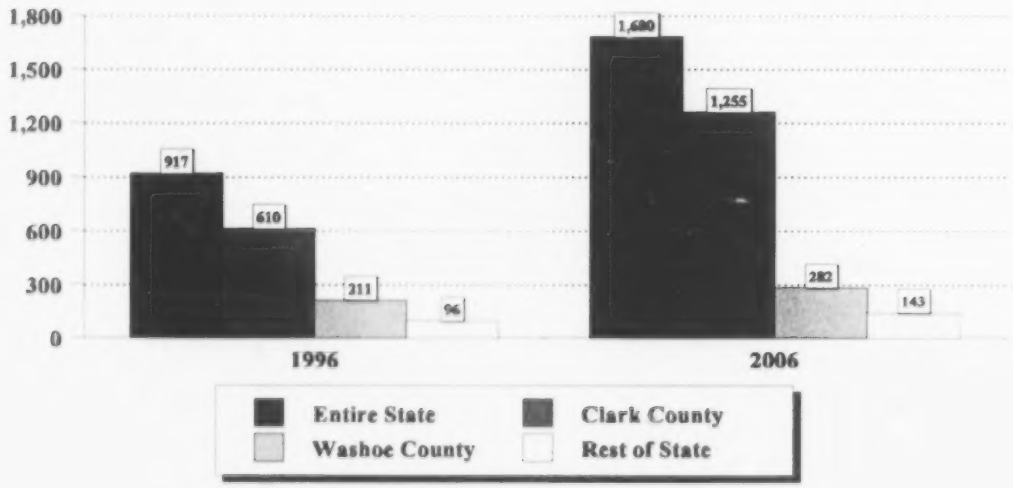
h. Health Technologists and Technicians: Radiologic Technologists and Technicians

Figure 26 presents employment estimates for radiologic technologists and technicians in Nevada from 1996 to 2006. Collectively, employment in this diverse set of occupations is projected to grow faster than the average for all occupations in Nevada, increasing by 763 jobs or by 83% through the year 2006. As Nevada's population grows and ages, the increasing demand for diagnostic imaging and therapeutic technology will fuel increased demand for radiologic technologists and technicians. One factor complicating the employment prospects of individuals trained in radiologic technology is the merging of radiologic and nuclear medicine departments underway in many hospitals. This trend will favor job applicants who are competent to perform both radiologic and nuclear medicine procedures. On average, demand for radiologic technologists and technicians will nonetheless generate approximately 90 annual openings in Nevada through 2006.

Figure 26: Estimated Employment of Radiologic Technologists and Technicians in Nevada – 1996 and Projected 2006



Source: Nevada Department of Employment, Training, and Rehabilitation (1998b).

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4. HEALTH SERVICE OCCUPATIONS

Table 13 presents statewide employment projections for six categories of health service occupations in Nevada from 1996 to 2006. At both the national and state level, each of the health service occupations listed in Table 13 is among the fastest growing occupations in the entire economy. In addition, half of the occupations listed in Table 13 will each generate an additional 1,000 plus jobs through the year 2006. Demand for four of these occupations will generate 100 or more annual job openings in each. Complicating an accurate assessment of both occupational supply and demand in the health services is rapidly changing demand for health service jobs by employers in the health sector and the unusually high turnover characteristic of these occupations. Nonetheless, the data presented indicate that employment growth in this diverse segment of health care occupations will be substantial. Four occupations that correspond to existing and proposed health programs in the UCCSN are discussed in greater detail below.

Table 13: Health Care Employment in Nevada – Estimated Number Employed in Health Service Occupations in 1996 and Projected 2006

HEALTH CARE OCCUPATION	NUMBER EMPLOYED		EMPLOYMENT CHANGE 1996-2006		PROJECTED NUMBER OF ANNUAL JOB OPENINGS – 1996 to 2006
	1996	Projected 2006	Number	Percent	
ALL OCCUPATIONS	917,490	1,410,930	493,440	53.78	–
ALL HEALTH CARE OCCUPATIONS	37,425	63,026	25,601	68.41	–
Dental Assistants	1,180	2,075	895	75.85	110
Home Health Aides	1,210	2,333	1,123	92.81	130
Medical Assistants	1,592	3,124	1,532	96.23	100
Nursing Assistants	3,355	5,343	1,988	59.26	300
Occupational Therapy Assistants	70	160	90	128.57	Less than 20
Physical Therapy Assistants	516	1,126	610	118.22	50

Source: Nevada Department of Employment, Training, and Rehabilitation (1998a, 1998b).

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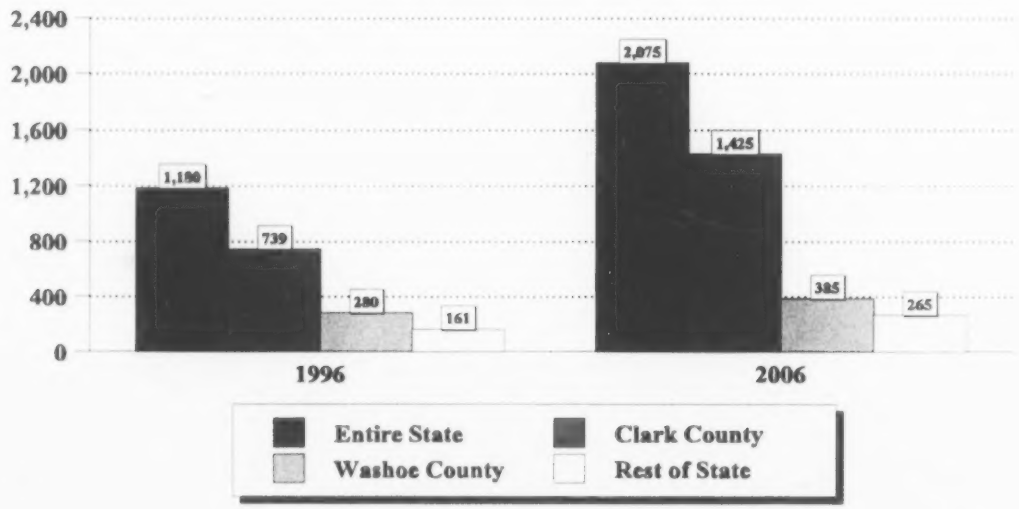
a. Health Service Occupations: Dental Assistants

Figure 27 presents data on the employment of dental assistants in Nevada. The employment of dental assistants is projected to grow faster than the average for all occupations in Nevada, increasing to approximately 2,075 jobs by the year 2006. Employment growth will be greatest in Clark County, where the number of dental assistant jobs will nearly double to about 1,425 jobs by 2006. The same factors fueling overall demand for dental services in Nevada – an aging population, unmet oral health needs, and rapid population growth – will create additional employment opportunities for dental assistants. On average, demand for dental assistants will generate about 110 annual job openings in Nevada through 2006.

Figure 27: Estimated Employment of Dental Assistants in Nevada – 1996 and Projected 2006



Source: Nevada Department of Employment, Training, and Rehabilitation (1998b).

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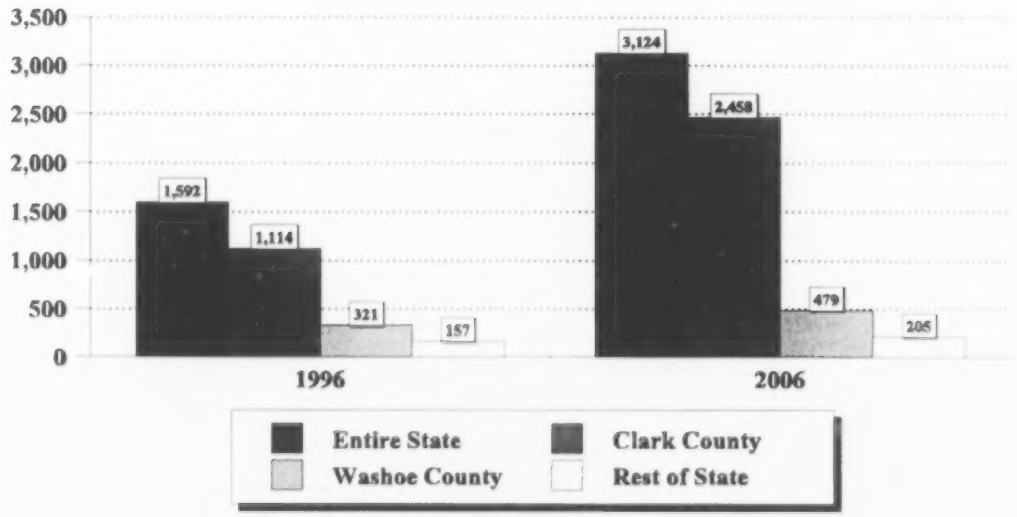
b. Health Service Occupations: Medical Assistants

Figure 28 presents data on employment trends for medical assistants in the state. The employment of medical assistants is projected to grow faster than the average for all occupations in Nevada, increasing by approximately 1532 jobs or nearly 100% from 1996 to 2006. This occupation will add approximately 1,344 jobs in Clark County or 88% of the statewide growth through 2006. Factors driving demand for medical assistants in Nevada include the growing number of group practices, clinics, and other health care institutions utilizing flexible medical personnel who can perform both administrative and clinical tasks. Demand for medical assistants will generate approximately 100 annual job openings in Nevada through the year 2006.

Figure 28: Estimated Employment of Medical Assistants in Nevada – 1996 and Projected 2006



Source: Nevada Department of Employment, Training, and Rehabilitation (1998b).

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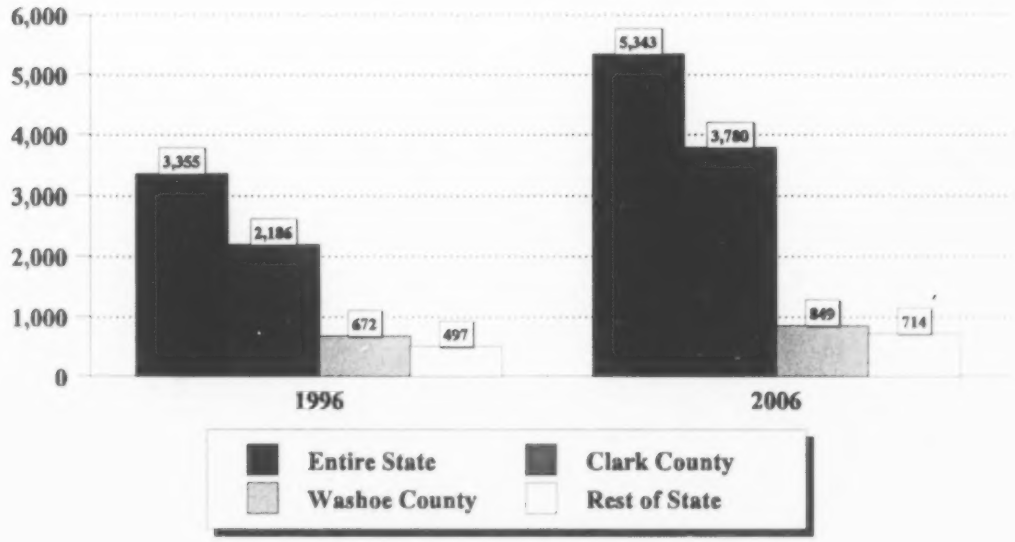
c. Health Service Occupations: Nursing Assistants

Figure 29 presents data on employment trends for nursing assistants in Nevada from 1996 to 2006. Nursing assistants are a large occupation in Nevada with an estimated current employment of 4,300. The employment of nursing assistants is projected to grow about as fast as average for all occupations in the state, increasing by almost 2,000 jobs through the year 2006. Factors fueling the increasing demand for nursing assistants include the growing demand for rehabilitation services and long-term care in Nevada. On average, demand for nursing assistants will generate an estimated 300 annual job openings through 2006.

Figure 29: Estimated Employment of Nursing Assistants in Nevada – 1996 and Projected 2006



Source: Nevada Department of Employment, Training, and Rehabilitation (1998b).

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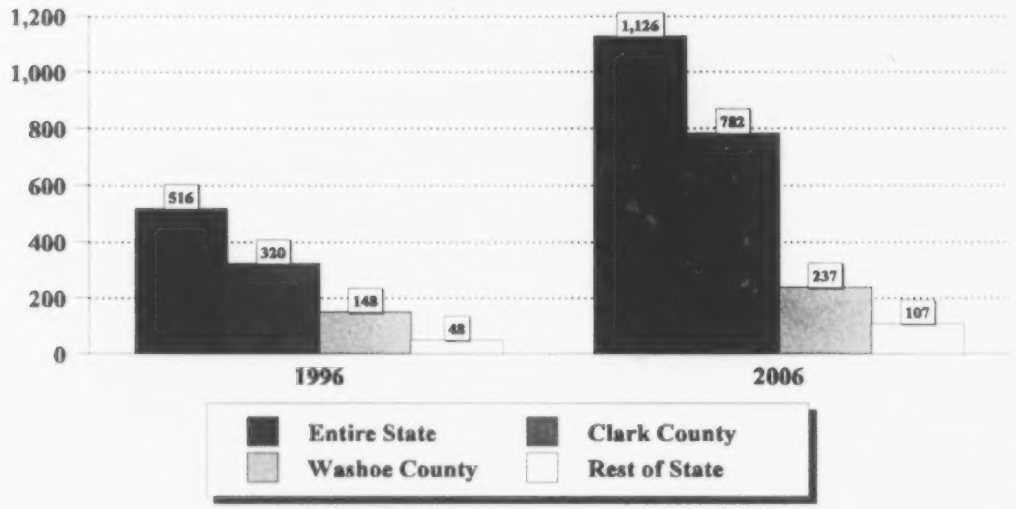
d. Health Service Occupations: Physical Therapy Assistants and Aides

Figure 30 presents employment projections for physical therapy assistants and aides in Nevada from 1996 to 2006. Physical therapy assistants and aides are a small occupation in Nevada that is projected to grow faster than average for all occupations in Nevada from 1996 to 2006. The number of jobs in this occupation is projected to increase by 610 jobs or nearly 120% by 2006. Increased demand for physical therapy assistants is being driven by the growing number of individuals with disabilities or limited functioning and pressures to enhance the cost-effective provision of physical therapy services through the use of comparatively lower-paid health professionals. The demand for physical therapy assistants and aides will generate approximately 50 annual job openings in Nevada through 2006.

Figure 30: Estimated Employment of Physical Therapy Assistants and Aides in Nevada – 1996 and Projected 2006



Source: Nevada Department of Employment, Training, and Rehabilitation (1998b).

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C. HEALTH CARE EMPLOYMENT TRENDS BY INDUSTRY SEGMENT IN NEVADA

This section briefly discusses employment trends in the eight major industry segments that make up the health services industry:

- Hospitals
- Offices of physicians
- Nursing and personal care facilities
- Home health care services
- Offices of dentists
- Medical and dental laboratories
- Offices of other health care practitioners
- Other health and allied health services[17]

Most jobs in the health services sector provide clinical, as opposed to non-clinical services. However, a number of important occupations in this industry are non-clinical in nature (e.g., managers, administrative support personnel, food preparation). Each industry segment thus employs varying proportion of clinical and non-clinical occupations. Nevertheless, the direction and magnitude of projected employment growth across these different *industry segments* mirror the *occupational* trends presented in the previous section.

In general, employment trends across each industry segment of the health services sector are similar to the occupation-specific trends presented in the previous section. That is, projected employment growth across industry segments of the health services industry in Nevada is substantial and broad-based. Data presented in Table 14 indicate that employment growth in *every* segment of the health services industry is projected to grow faster than the average for all industries in Nevada through the year 2006. Overall employment in the health services industry in Nevada is projected to increase by approximately 33,230 jobs or 73% through the year 2006. Industry segments with the largest projected growth are hospitals with a projected growth of 13,350 jobs and offices of physicians with a projected addition of 7,690 jobs through 2006.

[17]These industry segments are briefly defined in Appendix 6.

Table 14: Estimated Employment in Health Service Industry Segments in Nevada – 1996 and Projected 2006

INDUSTRY SEGMENT	EMPLOYMENT		EMPLOYMENT CHANGE	
	1996	Projected 2006	Number	Percent
ALL INDUSTRIES IN NEVADA	917,230	1,410,550	493,320	53.8
ALL HEALTH SERVICES IN NEVADA	45,630	78,860	33,230	72.8
Hospitals, Public and Private	19,410	32,760	13,350	68.8
Nursing and Personal Care Facilities	3,970	6,920	2,950	74.3
Offices of Physicians	11,190	18,880	7,690	68.7
Home Health Care Services	2,170	4,210	2,040	94.0
Offices of Dentists	3,490	6,040	2,550	73.1
Offices of Other Health Care Practitioners	2,670	5,080	2,410	90.3
Other Health and Allied Services	880	1,780	900	102.3
Medical and Dental Laboratories	1,850	3,190	1,340	72.4

Source: Nevada Department of Employment, Training, and Rehabilitation (1998b).

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Table 15: Estimated Employment in Health Service Industry Segments in the United States – 1996 and Projected 2006

INDUSTRY SEGMENT	EMPLOYMENT		EMPLOYMENT CHANGE	
	1996	Projected 2006	Number	Percent
ALL INDUSTRIES IN THE US	121,685,000	139,192,000	17,507,000	14.4
ALL HEALTH SERVICES IN THE US	10,506,800	13,637,500	3,130,700	29.8
Hospitals, Public and Private	4,851,300	5,246,300	395,000	8.1
Nursing and Personal Care Facilities	1,732,200	2,377,000	644,800	37.2
Offices of Physicians	1,728,000	2,524,000	796,000	46.1
Home Health Care Services	665,400	1,264,300	598,900	90.0
Offices of Dentists	609,200	818,900	209,700	34.4
Offices of Other Health Care Practitioners	414,200	703,000	288,800	69.7
Other Health and Allied Services	310,300	466,000	155,700	50.2
Medical and Dental Laboratories	196,200	238,000	41,800	21.3

Source: US Department of Labor, Bureau of Labor Statistics (1998).

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Table 15 presents employment data for health service industry segments in the United States. These data indicate substantial projected growth in health services employment nationwide. The health services industry is the largest industry in the US with almost 11 million jobs and will generate nearly 20 percent of all wage and salary jobs created in the US between 1996 and 2006. One of the striking aspects of data presented in Tables 14 and 15 is that the rate of projected employment growth (i.e., percentage growth from 1996 to 2006) for each segment of the health services sector in Nevada exceeds that of comparable industry segments for the entire nation. In summary, projected employment growth in the Nevada's health services industry through the year 2006 is substantial.

D. SUMMARY: HEALTH CARE WORKFORCE TRENDS IN NEVADA

A wide range of data has been presented on employment trends in health care occupations and industry segments of the health services sector in Nevada. Employment projections indicate robust growth in many health care occupations in the state. Likewise, by any measure projected employment growth across major segments of the health services industry is broad-based and substantial. In general, these data are suggestive, rather than conclusive, about the precise magnitude of employment change in the state. Nonetheless, these data foretell broad-based employment growth in the health care sector in Nevada and, potentially, future shortages in a number of health professions. In summary information presented in this chapter points to a number of key challenges facing health care policymakers and educators in Nevada that are examined in following chapters of this report.

HEALTH CARE EDUCATION IN NEVADA

A. INTRODUCTION

This chapter provides an overview of health care education in Nevada. The focus of this chapter is data on the current and projected number graduates of health care certificate and degree-granting programs in the UCCSN – that is, the number of health care professionals being trained and prepared by the state's system of higher education. The chapter concludes with an assessment of the current and projected supply and demand of health care professionals in Nevada. Using the number of annual job openings and the number of certificate and degree recipients as indicators of, respectively, occupational demand and supply for health care personnel in the state, an occupation-by-occupation evaluation of the extent to which UCCSN programs are meeting the health workforce needs of Nevada is presented. This assessment provides the basis for program-related recommendations presented in the final chapter of the report.

B. HEALTH CARE EDUCATION IN NEVADA

This section provides of brief overview of health care education opportunities presently available to residents of Nevada. In the most general terms, health care education in Nevada[18] is provided by certificate and degree programs offered by:

- University and Community College System of Nevada (UCCSN),
- Western Interstate Commission for Higher Education (WICHE), and
- Other schools and institutions throughout Nevada

These opportunities are outlined in Tables 16 through 18.

[18]Future reports will have to reckon with the explosion of Internet and distance education opportunities available to residents of Nevada. To date, most of the "on-line" course and program offerings available in the health professions are restricted to health care administration and management. Health offerings will undoubtedly expand to clinical professions in the coming century.

Table 16: Health Care Degree and Certificate Programs in the University and Community College System of Nevada – January 1999

Community College of Southern Nevada

- Cardiorespiratory Sciences (AAS Degree)
- Clinical Lab Processor (Certificate)
- Dental Assisting (Certificate)
- Dental Hygiene (AAS Degree)
- Diagnostic Medical Sonography (AAS Degree)
- Emergency Medical Technician (Courses)
- Health Information Technology (AAS Degree)
- Medical Laboratory Technology (AAS Degree)
- Medical Office Assisting (Certificate)
- Nursing (AAS Degree)
- Nursing Assistant (Course of Instruction)
- Occupational Therapy Assistant (AAS Degree)
- Ophthalmic Technology (AAS Degree)
- Paramedic Medicine (AAS Degree)
- Paramedic Medicine (Certificate)
- Pharmacy Technician (Certificate)
- Phlebotomy (Certificate)
- Physical Therapy Assistant (AAS Degree)
- Practical Nursing (Certificate)

Great Basin College

- Nursing (AAS Degree)
- Nursing Assistant (Course of Instruction)

Truckee Meadows Community College

- Dental Assisting (AAS Degree)
- Dental Assisting (Certificate)
- Nursing (AAS Degree)
- Nursing Assistant (Course of Instruction)
- Paramedic Medicine (Certificate)
- Radiologic Technology (AAS Degree)

University of Nevada, Las Vegas

- Clinical Laboratory Sciences (BS Degree)
- Comprehensive Medical Imaging (BS Degree)
- Nuclear Medicine (BS Degree)
- Nursing (BSN Degree)
- Nursing (MSN Degree)
- Physical Therapy (MS Degree)
- Radiography (Certificate)
- Therapeutic Recreation (BS Degree)

University of Nevada, Reno

- Medicine (MD and MD/PhD Degrees)
- Nursing (BSN Degree)
- Nursing (MSN Degree)
- Nutrition (BSN Degree)
- Nutrition (MS Degree)
- Speech Pathology (PhD Degree)
- Speech Pathology/Audiology (MS Degree)

Western Nevada Community College

- Emergency Medical Technician (Courses)
- Medical Laboratory Technician (AAS Degree)
- Nursing (AAS Degree)
- Nursing Assistant (Course of Instruction)
- Practical Nursing (Certificate)

Table 17: Health Care Degree Granting Programs at Universities Participating WICHE Professional Student Exchange Program – January 1999*

*Note: The number listed in parentheses next to each professional field refers to the number of annual openings available to Nevadans through the WICHE Professional Student Exchange Program

Dentistry (10 annual opening for Nevadans)
- Creighton University
- Loma Linda University
- Oregon Health Sciences University
- University of California, Los Angeles
- University of California, San Francisco
- University of Colorado Health Sciences Center
- University of the Pacific
- University of Southern California
- University of Washington

Occupational Therapy (3)
- Arizona School of Health Sciences (MPT)
- Loma Linda University (BS)
- Pacific University (MOT)
- Samuel Merritt College (MOT)
- University of New Mexico (BS)
- University of North Dakota (BS)
- University of Puget Sound (BS/MOT)
- University of Southern California (BS/MA)
- University of Washington (BS)

Optometry (3)
- Pacific University
- Southern California College of Optometry
- University of California, Berkeley

Pharmacy (5)
- Idaho State University (Pharm D)
- North Dakota State University (PharmD)
- Oregon State University (BS)
- University of Arizona (PharmD)
- University of California, San Francisco (Pharm D)
- University of Colorado Health Sciences Center (BS/PharmD)
- University of Montana (BS/PharmD)
- University of New Mexico (PharmD)
- University of the Pacific (PharmD)
- University of Southern California (PharmD)
- University of Utah (BS)
- University of Washington (PharmD)
- University of Wyoming (PharmD)
- Washington State University (Pharm D)

Physical Therapy (8)
- Arizona School of Health Sciences (MPT)
- California State University, Fresno (MPT)
- Chapman University (MPT)
- Eastern Washington University (MPT)
- Loma Linda University (MPT)
- Mount St. Mary's College (MPT)
- Pacific University (MOT)
- Samuel Merritt College (MOT)
- University of Colorado Health Sciences Center (MS)
- University of Montana (MS)
- University of New Mexico (BS)
- University of North Dakota (MPT)
- University of Puget Sound (MPT)
- University of Southern California (DPT)
- University of the Pacific (MS)
- University of Utah (MPT)
- University of Washington (BS)
- Western University of Health Sciences (MPT)

Physician Assistant Programs (4)
- Arizona School of Health Sciences
- University of California, Davis
- University of Colorado Health Sciences Center
- University of Southern California
- University of Utah
- University of Washington
- Western University of Health Sciences

Podiatry
- California College of Podiatric Medicine (DPM)

Table 18: Other Health Care Degree and Certificate Granting Programs in Nevada – January 1999*

Academy of Medical Careers (Las Vegas)
- Medical Assistant (Certificate)

B.A.D.G.E. (Basic Aid Duties for Ground Emergencies) (Las Vegas)
- EMT - Basic (Certificate)
- EMT - Intermediate (Certificate)

CPR Plus (Las Vegas)
- EMT - Basic (Certificate)
- EMT - Intermediate (Certificate)

Heritage College (Las Vegas)
- Medical Assistant (Certificate)

Mercy Medical Services Training Center (Las Vegas)
- EMT - First Responder (Certificate)
- EMT - Basic (Certificate)
- EMT - Intermediate (Certificate)

Nevada Career Institute (Las Vegas)
- Medical Assisting (Certificate)
- Phlebotomy Technician (Certificate)
- Surgical Technologist (Certificate)

Nevada Training Corporation (Las Vegas)
- Phlebotomy Technician (Certificate)
- EKG Technician (Certificate)

REMSA Training Center (Reno)
- EMT - First Responder (Certificate)
- EMT - Basic (Certificate)
- EMT - Intermediate (Certificate)

San Joaquin Valley College (Las Vegas)
- Clinical Medical Assisting (Associate Degree)
- Dental Assisting (Associate Degree)
- Pharmacy Technology (Associate Degree)
- Clinical Medical Assisting (Certificate)
- Dental Assisting (Certificate)
- Pharmacy Technology (Certificate)

Tropicana Dental Careers (Las Vegas)
- Dental Assisting (Certificate)

*Note: This inventory of "other" program offerings is likely to be incomplete and dated owing to the data sources used to compile this table. Sources included an unsystematic review of yellow pages listings and on-line education programs listed in the Nevada Career Information System.

As Table 16 suggests, the vast majority of health care education opportunities for Nevadans are provided by the UCCSN. These programs are discussed in greater detail in the next section. Table 17 highlights the educational opportunities for Nevadans available through WICHE's Professional Student Exchange Program. This program assists Nevada students with out-of-state tuition costs to attend health care programs unavailable in Nevada. The WICHE programs currently provide opportunities in seven health professional fields. However, the number of annual WICHE slots available to state residents in the fields of dentistry, occupational therapy, pharmacy, and physical therapy is relatively low with respect to the projected occupational demand for health professionals trained in these disciplines.

Table 18 lists additional certificate and degree programs offered by institutions in, primarily, Las Vegas and Reno. These offerings are largely confined to programs that certify health care technologists, technicians, and service workers. Table 19 synthesizes the information contained in the previous three tables and provides a picture of current health care degree and certificate programs available to Nevada residents. These programs are presented according to the major occupational categories used in the previous chapter. Table 19 indicates that the UCCSN provides health care education opportunities to Nevadans across the four major categories of health care occupations discussed in this report. This table also indicates that the WICHE Professional Student Exchange Program fills a number of gaps in educational programs for health diagnosing, assessment, and treatment fields presently unavailable to Nevadans. Finally, the programs listed in last column of Table 19 highlight the existence of a small number of certificate and degree programs outside of the UCCSN and WICHE Professional Student Exchange Program for those pursuing employment in health-related technological and service occupations.

In conclusion, the purpose of this brief discussion has been to describe the range of health care education offerings available to Nevadans. Health care professionals in Nevada are trained and prepared by programs in the UCCSN, as well as by the WICHE Professional Student Exchange Program and other schools and institutions in Nevada. The remainder of this chapter is devoted to a closer examination of health care programs in the UCCSN and presumes, correctly, that the UCCSN is the primary producer of health care professionals in the state.[19]

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[19]Of course, it must be added that colleges and universities beyond the state's boarders prepare a significant number of health care professionals who ultimately take employment in Nevada. An important issue facing the State of Nevada is whether the state should (1) continue to rely on health care professionals trained in other states or (2) expand statewide capacity in existing UCCSN programs. Health care providers and resource directors throughout the state have indicated that recruitment difficulties and staff turnover in certain health care settings are a function of the high proportion of out-of-state individuals taking jobs in some health care occupations in Nevada.

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Table 19: Health Care Education Programs at Degree and Certificate Granting Institutions in Nevada – January 1999

LEGEND					
D	Doctoral Degree	M	Master's Degree	C	Certificate of Achievement
F	First Professional Degree	B	Bachelor's Degree	CC	Course of Completion
		A	Associate Degree		

PRIMARY HEALTH CARE OCCUPATION OF DEGREE OR CERTIFICATE RECIPIENT	HEALTH CARE PROGRAMS AT DEGREE AND CERTIFICATE GRANTING INSTITUTIONS IN NEVADA		
	UCCSN	WICHE	Other Schools
Health Diagnosing Occupations			
Chiropractors			
Dentists		F	
Optometrists		F	
Physicians	F		
Podiatrists		F	
Health Assessment and Treatment Occupations			
Dietitians and Nutritionists	M, B		
Occupational Therapists		M, B	
Pharmacists		F, B	
Physical Therapists	M	D, M, B	
Physician Assistants		B	
Recreational Therapists	B		
Registered Nurses	M, B, A		
Respiratory Therapists	A		
Speech-Language Pathologists and Audiologists	D, M		

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(continued)
Table 19, continued

PRIMARY HEALTH CARE OCCUPATION OF DEGREE OR CERTIFICATE RECIPIENT	HEALTH CARE PROGRAMS AT DEGREE AND CERTIFICATE GRANTING INSTITUTIONS IN NEVADA		
	UCCSN	WICHE	Other Schools
Health Technologists and Technicians			
Cardiology Technologists			
Dental Hygienists	A		
Electrocardiograph (EKG) Technicians			C
Emergency Medical Technicians	A, C, Ce		C, Ce
Licensed Practical Nurses	C		
Medical Laboratory Technologists and Technicians	B, A, C		C
Medical Records Technician	A		
Nuclear Medicine Technologists	B		
Opticians	A		
Pharmacy Technicians and Assistants	C		A, C
Radiologic Technologists and Technicians	B, A, C		
Surgical Technologists and Technicians			C
Health Service Occupations			
Dental Assistants	A, C		A, C
Home Health Aides			
Medical Assistants	C		A, C
Nursing Assistants and Aides	Ce		
Occupational Therapy Assistants and Aides	A		
Physical Therapy Assistants and Aides	A		

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C. HEALTH CARE EDUCATION PROGRAMS IN THE UCCSN

This section examines existing health care education programs in the UCCSN. This information was obtained from a survey administered to campus institutional research directors and administrators of existing health care programs in the UCCSN. Most of the information presented in this section consists of current and projected graduation trends in these programs. Table 20 provides a detailed list of all current health care education programs in the UCCSN according to the primary health care occupation of certificate and/or degree recipients in those programs. For example, a degree recipient from the Associate Degree Program in Dental Hygiene at the Community College of Southern Nevada possesses the minimal educational requirements (minus licensing requirements and examinations) for entry into the field of dental hygiene in Nevada. Table 20 thus provides a guide for assessing programs in the UCCSN that train and prepare individuals for a number of health care occupations and fields discussed in the previous chapter. Currently, the UCCSN has health care education programs that train and prepare individuals to enter 21 of the 32 health care occupations examined in this report.

Table 21 provides an expanded list of health care education programs in the UCCSN for the year 2001. This table includes each of the programs listed in Table 20 plus new health care programs being proposed by campuses throughout the system. Campus master plans submitted to the UCCSN System Administration Office indicate that no existing programs are slated for elimination. As such, the projected range of health care education programs listed in Table 21 represents existing programs plus those indicated in each of the most recent campus master plans. Major programs being considered by the system's campuses include pharmacy (UNR), dentistry (UNLV), and occupational therapy (UNLV). In addition, campuses are preparing to extend existing UCCSN educational opportunities in the fields of dental hygiene (TMCC), nutrition (UNLV, TMCC), and speech and hearing sciences (UNLV). If each of the proposed programs listed in Table 21 were approved by the Board of Regents and implemented by the proposing campus, the UCCSN would have health care education programs capable of preparing and training individuals to enter 26 of the 32 health care occupations examined in this report.[20]

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[20] An additional proposed program, "Dietetics Technician – AAS Degree," would prepare individuals to enter the occupation, "dietetics technician," which was not one of the 32 occupations discussed in this report.

Table 20: Primary Health Care Occupation of Health Care Degree and Certificate Recipients in the UCCSN – January 1999

PRIMARY HEALTH CARE OCCUPATION OF DEGREE OR CERTIFICATE RECIPIENTS	HEALTH CARE CERTIFICATE AND DEGREE PROGRAM IN THE UCCSN (UCCSN Campus)
Health Diagnosing Occupations	
Physicians	• Medicine – MD and MD/PhD Degrees
Health Assessment and Treatment Occupations	
Dietitians and Nutritionists	• Nutrition – MS Degree (UNR) • Nutrition – BS Degree (UNR)
Physical Therapists	• Physical Therapy – MS Degree (UNLV)
Recreational Therapists	• Therapeutic Recreation – BS Degree (UNLV)
Registered Nurses	• Nursing – MSN Degree (UNLV, UNR) • Nursing – BSN Degree (UNLV, UNR) • Nursing – AAS Degree (CCSN, GBC, TMCC, WNCC)
Respiratory Therapists	• Cardiorespiratory Sciences – AAS Degree (CCSN)
Speech-Language Pathologists and Audiologists	• Speech Pathology – PhD Degree (UNR) • Speech Pathology and Audiology – MS Degree (UNR)
Health Technologists and Technicians	
Dental Hygienists	• Dental Hygiene – AAS Degree (CCSN)
Emergency Medical Technicians	• Paramedic Medicine – AAS Degree (CCSN) • Paramedic Medicine – Certificate (CCSN, TMCC) • EMT – Courses of Instruction (CCSN, WNCC)
Licensed Practical Nurses	• Certificate Program – Practical Nursing (CCSN, WNCC)
Medical Laboratory Technologists and Technicians	• Clinical Laboratory Sciences – BS Degree (UNLV) • Medical Laboratory Technician – AAS Degree (WNCC) • Medical Laboratory Technology – AAS Degree (CCSN) • Clinical Lab Processor – Certificate (CCSN) • Phlebotomy – Certificate (CCSN)
Medical Records Technicians	• Health Information Technology – AAS Degree (CCSN)
Nuclear Medicine Technologists	• Nuclear Medicine – BS Degree (UNLV)

(continued)

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Table 20, continued

PRIMARY HEALTH CARE OCCUPATION OF DEGREE OR CERTIFICATE RECIPIENTS	HEALTH CARE CERTIFICATE AND DEGREE PROGRAM IN THE UCCSN (Campus)
Health Technologists and Technicians, continued	
Opticians	• Ophthalmic Technology – AAS Degree (CCSN)
Pharmacy Technicians and Assistants	• Pharmacy Technician – Certificate (CCSN)
Radiologic Technologists and Technicians	• Comprehensive Medical Imaging – BS Degree (UNLV) • Diagnostic Medical Sonography – AAS Degree (CCSN) • Radiologic Technology – AAS Degree (TMCC) • Radiography – Certificate (UNLV)
Health Service Occupations	
Dental Assistants	• Dental Assisting – AAS Degree (TMCC) • Dental Assisting – Certificate (CCSN, TMCC)
Medical Assistants	• Medical Office Assisting – Certificate (CCSN)
Nursing Assistants and Aides	• Nursing Assistant – Course of Instruction (CCSN, GBC, TMCC, WNCC)
Occupational Therapy Assistants and Aides	• Occupational Therapy Assistant – AAS Degree (CCSN)
Physical Therapy Assistants and Aides	• Physical Therapy Assistant – AAS Degree (CCSN)

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Table 21: Primary Health Care Occupation of Health Care Degree and Certificate Recipients from Existing and Proposed Programs in the UCCSN*

*Note: Proposed programs are indicated in italics.

PRIMARY HEALTH CARE OCCUPATION OF DEGREE OR CERTIFICATE RECIPIENTS	HEALTH CARE CERTIFICATE AND DEGREE PROGRAM IN THE UCCSN (UCCSN Campus)
Health Diagnosing Occupations	
Dentists	• *Dentistry – DDS Degree (UNLV)*
Physicians	• Medicine – MD and MD/PhD Degrees
Health Assessment and Treatment Occupations	
Dietitians and Nutritionists	• Nutrition – MS Degree (UNR) • Nutrition – BS Degree (UNR) • *Dietetics – RD in Dietetics (UNLV)* • *Nutritional Sciences – BS Degree (UNLV)*
Occupational Therapists	• *Occupational Therapy – MS Degree (UNLV)*
Pharmacists	• *Pharmacy – PharmD Degree (UNR)* • *Pharmacy – BS Degree (UNR)*
Physician Assistants	• *Physician's Assistant – AAS Degree (CCSN)*
Physical Therapists	• Physical Therapy – MS Degree (UNLV)
Recreational Therapists	• Therapeutic Recreation – BS Degree (UNLV)
Registered Nurses	• Nursing – MSN Degree (UNLV, UNR) • Nursing – BSN Degree (UNLV, UNR) • Nursing – AAS Degree (CCSN, GBC, TMCC, WNCC)
Respiratory Therapists	• Cardiorespiratory Sciences – AAS Degree (CCSN)
Speech-Language Pathologists and Audiologists	• Speech Pathology – PhD Degree (UNR) • Speech Pathology and Audiology – MS Degree (UNR) • *Speech and Hearing Sciences – MS Degree (UNLV)*
Health Technologists and Technicians	
Dental Hygienists	• Dental Hygiene – AAS Degree (CCSN) • *Dental Hygiene – AAS Degree (TMCC)*
Dietetics Technicians	• *Dietetics Technician – AAS Degree (TMCC)*

(Continued)

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Table 21, continued

PRIMARY HEALTH CARE OCCUPATION OF DEGREE OR CERTIFICATE RECIPIENTS	HEALTH CARE CERTIFICATE AND DEGREE PROGRAM IN THE UCCSN (Campus)
Health Technologists and Technicians, continued	
Electrocardiograph (EKG) Technicians	• *EKG Technician – AAS Degree (UNLV)*
Emergency Medical Technicians	• Paramedic Medicine – AAS Degree (CCSN) • Paramedic Medicine – Certificate (CCSN, TMCC) • EMT – Courses of Instruction (CCSN, WNCC)
Licensed Practical Nurses	• Certificate Program – Practical Nursing (CCSN, WNCC)
Medical Laboratory Technologists and Technicians	• Clinical Laboratory Sciences – BS Degree (UNLV) • Medical Laboratory Technician – AAS Degree (WNCC) • Medical Laboratory Technology – AAS Degree (CCSN) • Clinical Lab Processor – Certificate (CCSN) • Phlebotomy – Certificate (CCSN)
Medical Records Technicians	• Health Information Technology – AAS Degree (CCSN) • *Medical Records Technician – AAS Degree (TMCC)*
Nuclear Medicine Technologists	• Nuclear Medicine – BS Degree (UNLV)
Opticians	• Ophthalmic Technology – AAS Degree (CCSN) • *Ophthalmic Medical Technician – AAS Degree (CCSN)*
Pharmacy Technicians	• Pharmacy Technician – Certificate (CCSN) • *Pharmacy Technician – AAS Degree (TMCC)*
Radiologic Technologists and Technicians	• Comprehensive Medical Imaging – BS Degree (UNLV) • Diagnostic Medical Sonography – AAS Degree (CCSN) • Radiologic Technology – AAS Degree (TMCC) • Radiography – Certificate (UNLV)
Health Service Occupations	
Dental Assistants	• Dental Assisting – AAS Degree (TMCC) • Dental Assisting – Certificate (CCSN, TMCC)
Medical Assistants	• Medical Office Assisting – Certificate (CCSN)
Nursing Assistants and Aides	• Nursing Assistant – Course of Instruction (CCSN, GBC, TMCC, WNCC)
Occupational Therapy Assistants and Aides	• Occupational Therapy Assistant – AAS Degree (CCSN)
Physical Therapy Assistants and Aides	• Physical Therapy Assistant – AAS Degree (CCSN)

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2. UCCSN PROGRAMS FOR HEALTH DIAGNOSING OCCUPATIONS

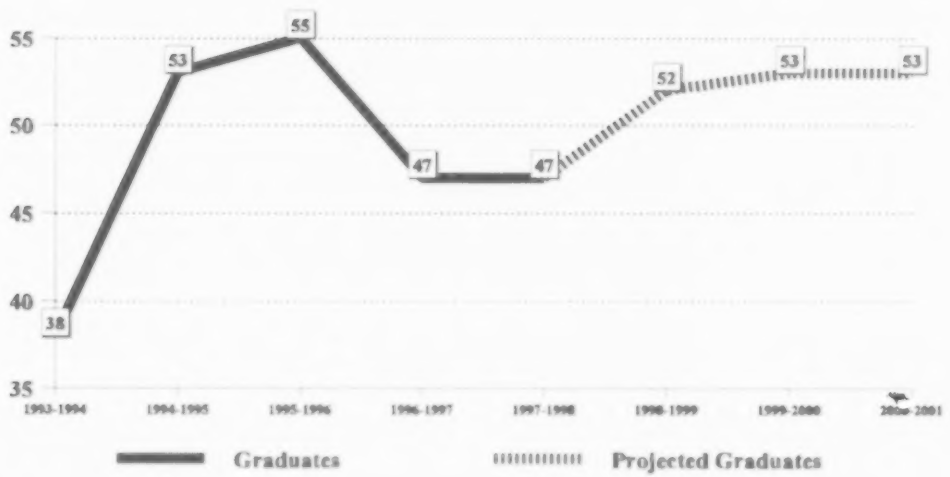
a. UCCSN Programs for Health Diagnosing Occupations: Physicians

The following degree programs in the University and Community College System of Nevada currently prepare and train physicians:

- MD and MD/PhD Degree Programs at the University of Nevada School of Medicine

Figure 31 reveals that in academic year 1997-98, the total number of students graduating from these programs was 47. According to program administrators, 53 students are projected to graduate from the same programs in academic year 2000-2001. There are presently no plans by the School of Medicine to expand statewide capacity in UCCSN programs that train and prepare physicians.

Figure 31: Graduates of UCCSN Programs that Train and Prepare Physicians – 1994 to Projected 2001*



*Graduates of the MD and MD/PhD Programs at the University of Nevada School of Medicine.

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2. UCCSN PROGRAMS FOR HEALTH ASSESSMENT AND TREATMENT OCCUPATIONS

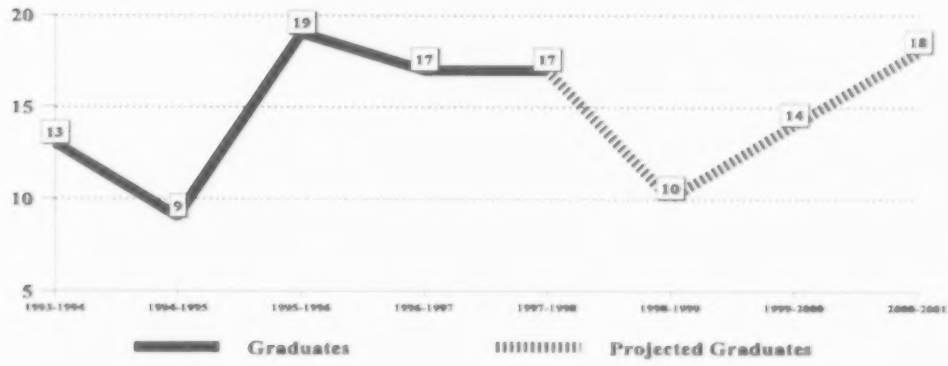
a. UCCSN Programs for Health Assessment and Treatment Occupations: Dietitians and Nutritionists

Two degree programs in the University and Community College System of Nevada currently prepare and train dietitians and nutritionists:

- Master of Science in Nutrition (MS Degree Program) at the University of Nevada, Reno
- Bachelor of Science in Nutrition (BS Degree Program) at the University of Nevada, Reno

Figure 32 indicates that in academic year 1997-98, the total number of students graduating from these two programs was 17. According to program administrators, 18 students are projected to graduate from the same programs in academic year 2000-2001. There are presently plans to expand statewide capacity in UCCSN programs that train and prepare dietitians and nutritionists in Nevada. According to campus master plans submitted to the System Administration Office, the University of Nevada, Las Vegas is developing plans for a dietetics program (RD in Dietetics) and bachelor's degree program in nutritional sciences.

Figure 32: Graduates of UCCSN Programs that Train and Prepare Dietitians and Nutritionists – 1994 to Projected 2001*



*Graduates of the MS Degree Program in Nutrition (UNR) and the BS Degree Program in Nutrition (UNR).

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b. UCCSN Programs for Health Assessment and Treatment Occupations: Physical Therapists

Currently, one degree program in the University and Community College System of Nevada prepares and trains physical therapists:

- Master of Science in Physical Therapy (MS Degree Program) at the University of Nevada, Las Vegas

This program began admitting students in the Fall semester of 1998 and will not produce a graduating class until academic year 2000-2001. According to program administrators, 21 students are projected to graduate from the same programs in academic year 2000-2001. There are presently no plans to expand statewide capacity in UCCSN programs that train and prepare physical therapists.

c. UCCSN Programs for Health Assessment and Treatment Occupations: Recreational Therapists

One degree program in the University and Community College System of Nevada currently prepares and trains recreational therapists:

- Bachelor of Science in Recreation (BS Degree Program) – Therapeutic Recreation Concentration at the University of Nevada, Las Vegas

In academic year 1997-98, the total number of students graduating from this programs was 3. According to program administrators, 6 students are projected to graduate from the same programs in academic year 2000-2001. There are presently no plans to expand statewide capacity in UCCSN programs that train and prepare recreational therapists.

d. UCCSN Programs for Health Assessment and Treatment Occupations: Registered Nurses

The following degree programs in the University and Community College System of Nevada currently prepare and train registered nurses:

- Master of Science in Nursing (MSN Degree Programs) at the University of Nevada, Las Vegas and the University of Nevada, Reno
- Bachelor of Science in Nursing (BSN Degree Programs) at the University of Nevada,

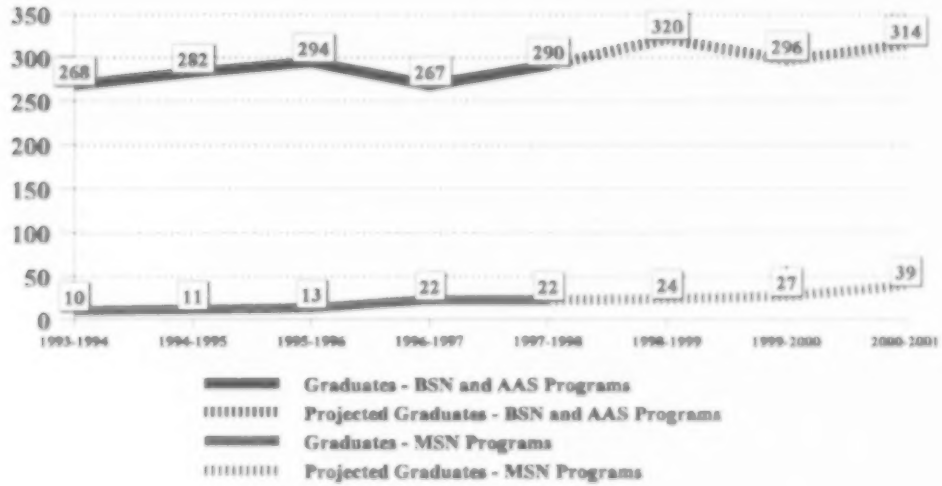
Las Vegas and the University of Nevada, Reno

- Associate of Applied Science in Nursing (AAS Degree Programs) at the Community College of Southern Nevada, Great Basin College, Truckee Meadows Community College, and Western Nevada Community College[21]

In academic year 1997-98, the total number of students graduating from these eight programs was 312. According to program administrators, 353 students are projected to graduate from the same programs in academic year 2000-2001. Figure 33 details past and projected graduation data for graduates of master's, bachelor's, and associate degree programs in nursing in the UCCSN.

Several nursing program administrators plan to expand statewide capacity in UCCSN

Figure 33: Graduates of UCCSN Programs that Train and Prepare Registered Nurses – 1994 to Projected 2001*



*Graduates of MS Degree Programs in Nursing (UNLV, UNR), BS Degree Programs in Nursing (UNLV, UNR), and AAS Degree Programs in Nursing (CCSN,GBC, TMCC, WNCC).

[21]One of the purposes of this study is to match occupational data in Nevada with graduation figures in the UCCSN. Unfortunately, the occupational data used in this report does not disagreggate employment trends between registered nurses with master's-level training and education – i.e., advanced practitioners of nursing – and those who do not require advanced training and credentials – i.e., most registered nurses in Nevada. Since employment data are broadly collected for the occupational category "registered nurses," the present analysis collapses graduation data on these three very different types of programs associated with registered nurse training and preparation.

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programs that train and prepare registered nurses. However, present plans to increase statewide capacity will be through the expansion of existing programs and course offerings, rather than the creation of new degree programs.

e. UCCSN Programs for Health Assessment and Treatment Occupations: Respiratory Therapists

One program in the University and Community College System of Nevada currently prepares and trains respiratory therapists:

- Associate of Applied Science in Cardiorespiratory Sciences (AAS Degree Program) at the Community College of Southern Nevada

This program began admitting students in the Fall semester of 1997 and, thus, did not produce a graduating class in academic year 1997-98. According to program administrators, 25 students are projected to graduate from the program in academic year 2000-2001. Plans to increase statewide capacity in UCCSN offerings that prepare respiratory therapists will occur through the expansion of the existing program, rather than the creation of new UCCSN programs.

f. UCCSN Programs for Health Assessment and Treatment Occupations: Speech-Language Pathologists and Audiologists

The following degree programs in the University and Community College System of Nevada currently prepare and train speech-language pathologists and audiologists:

- Doctor of Philosophy in Speech Pathology (PhD Degree Program) at the University of Nevada School of Medicine

- Master of Science in Speech Pathology (MS Degree Program) at the University of Nevada School of Medicine

In academic year 1997-98, the total number of students graduating from these two programs was 25. According to program administrators, 26 students are projected to graduate from the same programs in academic year 2000-2001. There are presently no plans to expand statewide capacity in UCCSN programs that train and prepare students in speech-language pathology and audiology.

3. UCCSN PROGRAMS FOR HEALTH TECHNOLOGISTS AND TECHNICIANS

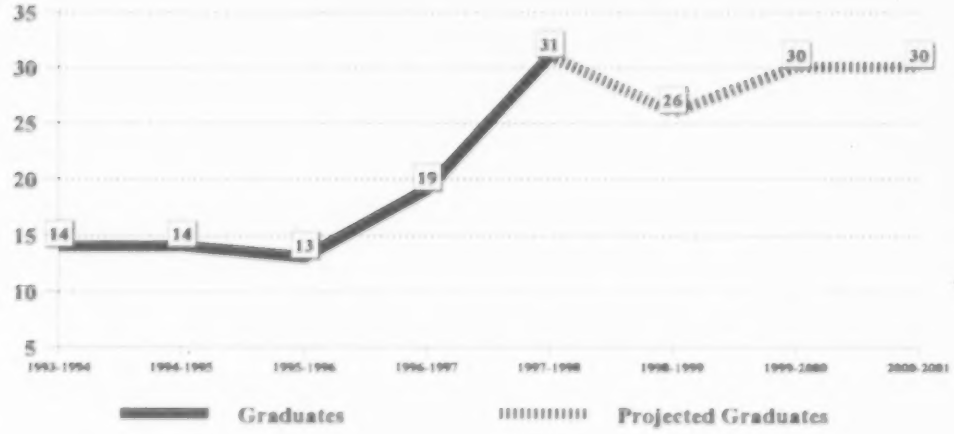
a. UCCSN Programs for Health Assessment and Treatment Occupations: Dental Hygienists

Currently, one degree program in the University and Community College System of Nevada prepares and trains dental hygienists:

- Associate of Applied Science in Dental Hygiene (AAS Degree Program) at the Community College of Southern of Nevada

Figure 34 highlights graduation trends in this program. In academic year 1997-98, the total number of students graduating from this program was 31. According to program administrators, 30 students are projected to graduate from this program in academic year 2000-2001. Plans exist to increase statewide capacity in UCCSN programs that train and prepare dental hygienists. Truckee Meadows Community College is planning to develop an associate degree program.

Figure 34: Graduates of the UCSSN Program that Trains and Prepares Dental Hygienists – 1994 to Projected 2001*



*Graduates of the AAS Degree Program in Dental Hygienic at CCSN.

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b. UCCSN Programs for Health Assessment and Treatment Occupations: Emergency Medical Technicians

The following certificate and degree programs in the University and Community College System of Nevada currently prepare and train emergency medical technicians:

- Associate of Applied Science in Paramedic Medicine (AAS Degree Program) at the Community College of Southern Nevada
- Certificate of Achievement Programs in Paramedic Medicine at the Community College of Southern Nevada and Truckee Meadows Community College
- Courses of Instruction at the Community College of Southern Nevada and Western Nevada Community College

As Figure 35 indicates, the total number of students completing these programs in academic year 1997-98 was 239 – the vast majority of these students (92%) completed EMT courses, while 8% (19 students) obtained certificates or degrees. According to program administrators, approximately 260 students are projected to complete coursework or graduate from the same programs in academic year 2000-2001 (in roughly similar proportions). There are presently no plans to expand statewide capacity in UCCSN programs for emergency medical technicians.

Figure 35: Graduates of UCCSN Programs and Courses of Instruction that Train and Prepare Emergency Medical Technicians – 1994 to Projected 2001*

*Graduates of the AAS Degree Program in Paramedic Medicine (CCSN), Certificate Programs in Paramedic Medicine (CCSN, TMCC), and various EMT Courses of Instruction (CCSN, WNCC).

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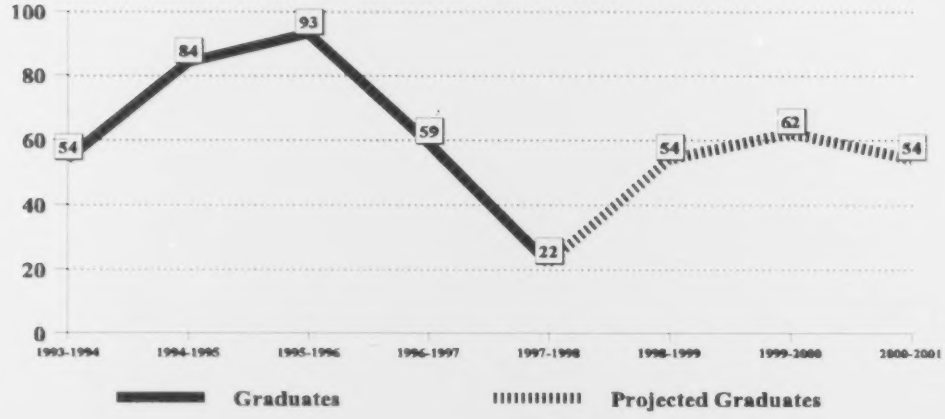
c. UCCSN Programs for Health Assessment and Treatment Occupations: Licensed Practical Nurses

Two certificate programs in the University and Community College System of Nevada currently prepare and train licensed practical nurses (LPN's):

- Certificate of Achievement Program in Practical Nursing at the Community College of Southern Nevada and Western Nevada Community College

Figure 36 illustrates past and projected trends in LPN program graduates. In academic year 1997-98, the total number of students graduating from these programs was 22. According to program administrators, 54 students are projected to graduate from the same programs in academic year 2000-2001. There are presently no plans to expand statewide capacity in UCCSN programs that train and prepare licensed practical nurses.

Figure 36: Graduates of UCCSN Programs that Train and Prepare Licensed Practical Nurses (LPN's) – 1994 to Projected 2001*



*Graduates of Certificate Programs in Practical Nursing (CCSN, WNCC).

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d. UCCSN Programs for Health Assessment and Treatment Occupations: Medical Laboratory Technologists and Technicians

The following degree and certificate programs in the University and Community College System of Nevada currently prepare and train medical laboratory technologists and technicians:

- Bachelors of Science in Clinical Laboratory Sciences (BS Degree Program) at the University of Nevada, Las Vegas
- Associate of Applied Science in Medical Laboratory Technician (AAS Degree Program) at Western Nevada Community College
- Associate of Applied Science in Medical Laboratory Technology (AAS Degree Program) at the Community College of Southern Nevada
- Certificate of Achievement Program in Clinical Lab Processor at the Community College of Southern Nevada
- Certificate of Achievement Program in Phlebotomy at the Community College of Southern Nevada

As Figure 37 indicates, the combined number of students graduating from these programs in academic year 1997-98 was 34. Approximately one-third of total program graduates are bachelor's degree recipients and two-thirds are certificate and associate degree recipients. According to program administrators, this figure will rise dramatically to a projected 121 graduates in academic year 2000-2001 (in roughly the same proportions of degree and certificate recipients).[22] There are presently no plans to expand statewide capacity in UCCSN programs that train and prepare medical laboratory technologists and technicians.

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[22] Again, one of the purposes of this study is to match occupational data with graduation figures in the UCCSN. The occupational data used in this report do not disagreggate employment trends (e.g., projected annual openings by occupational category) between laboratory technologists requiring bachelor's-level preparation and technicians requiring an associate degree or certificate-level training. Since employment data are broadly collected for the occupational category "medial laboratory technologists and technicians," the present analysis collapses graduation data on these diverse programs associated with medical-laboratory training and preparation.

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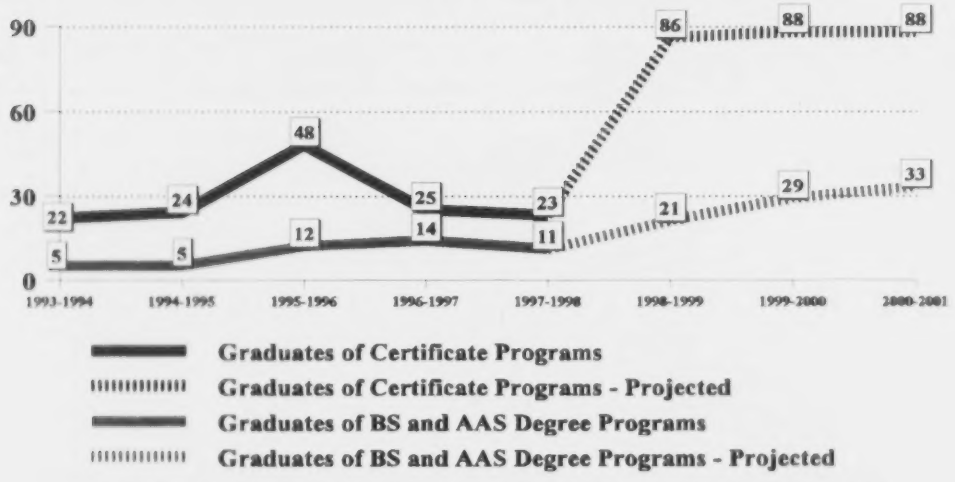
Figure 37: Graduates of UCCSN Programs that Train and Prepare Medical Laboratory Technologists and Technicians – 1994 to Projected 2001*



*Graduates of the BS Degree Program in Clinical Laboratory Science (UNLV), AAS Degree Program in Medical Laboratory Technician (WNCC), AAS Degree Program in Medical Laboratory Technology (WNCC), Certificate Program in Clinical Lab Processor (CCSN), and Certificate Program in Phlebotomy (CCSN).

e. UCCSN Programs for Health Assessment and Treatment Occupations: Medical Records Technicians

Currently, one degree program in the University and Community College System of Nevada prepares and trains medical records technicians:[23]

- Associate of Applied Science in Health Information Technology (AAS Degree Program) at the Community College of Southern Nevada

In academic year 1997-98, the total number of students graduating from this program was 9. According to program administrators, 12 students are projected to graduate from this program in academic year 2000-2001. There are presently no plans to expand statewide capacity in UCCSN

[23]In this report, programs that prepare and train "medical records technicians" were restricted to those that prepare students for clinical work. Programs that are primarily administrative in focus (e.g., clinical lab billing, medical transcription, medical office billing) were excluded from the present analysis. This report recognizes that most medical office work involves a combination of clinical and non-clinical tasks.

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programs that train and prepare medical records technicians.

f. UCCSN Programs for Health Assessment and Treatment Occupations: Nuclear Medicine Technologists

One degree program in the University and Community College System of Nevada currently prepares and trains nuclear medicine technologists:

- Bachelor of Science in Nuclear Medicine (BS Degree Program) at the University of Nevada, Las Vegas

In academic year 1997-98, the total number of graduates of this program was 5. According to program administrators, 12 students are projected to graduate from the nuclear medicine program in academic year 2000-2001. There are presently no plans to expand statewide capacity in UCCSN programs that prepare nuclear medicine technologists.

g. UCCSN Programs for Health Assessment and Treatment Occupations: Opticians

Currently, one degree program in the University and Community College System of Nevada currently prepares and trains opticians:

- Associate of Applied Science in Ophthalmic Technology (AAS Degree Program) at the Community College of Southern Nevada

This program began admitting students in the fall semester of 1998 and will not produce a graduating class until academic year 2000-2001. According to program administrators, 15 students are projected to graduate from the ophthalmic technology program at CCSN in academic year 2000-2001. There are presently no plans to expand statewide capacity in UCCSN offerings for opticians.

h. UCCSN Programs for Health Assessment and Treatment Occupations: Pharmacy Technicians and Assistants

One certificate program in the University and Community College System of Nevada currently prepares and trains pharmacy technicians and assistants:

- Certificate of Achievement Program at the Community College of Southern Nevada

In academic year 1997-98, 11 students graduated from this program. According to program

administrators, 30 students are projected to graduate from this program in academic year 2000-2001. There are presently no plans to expand statewide capacity in UCCSN academic program offerings that train and prepare pharmacy technicians and assistants.

i. UCCSN Programs for Health Assessment and Treatment Occupations: Radiologic Technologists and Technicians

The following degree and certificate programs in the University and Community College System of Nevada currently prepare and train radiologic technologists and technicians:

- Bachelor of Science in Comprehensive Medical Imaging (BS Degree Program) at the University of Nevada, Las Vegas
- Associate of Applied Science in Diagnostic Medical Sonography (AAS Degree Program) at the Community College of Southern Nevada
- Associate of Applied Science in Radiologic Technology (AAS Degree Program) at Truckee Meadows Community College
- Certificate of Achievement Program in Radiography at the University of Nevada, Las Vegas

As Figure 38 indicates, the combined number of students graduating from these programs in academic year 1997-98 was 41. Approximately one-third of total program graduates are degree recipients and two-thirds have received certificates. According to program administrators, the total number of graduates will rise to 60, with a substantial rise in the number of BS and AAS degree recipients.[24] Program administrators are currently exploring strategies to expand statewide capacity in UCCSN programs that train and prepare radiologic technologists and technicians.

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[24]The occupational data used in this report do not include disagreggated figures for annual openings for jobs in the broad category of "radiologic technologists and technicians." Jobs in this category require widely varying amounts of education and on-the-job training. Since the employment data for radiologic technologists and technicians used in this study were collapsed, the present analysis was forced to collapse graduation data on these diverse programs associated with radiologic training and preparation.

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Figure 38: Graduates of UCCSN Programs that Train and Prepare Radiologic Technologists and Technicians – 1994 to Projected 2001*

*Graduates of the BS Degree Program in Comprehensive Medical Imaging (UNLV), AAS Degree Program in Diagnostic Medical Sonography (CCSN), Certificate Program in Radiologic Technology (TMCC), and Certificate Program in Radiography (UNLV).

4. UCCSN PROGRAMS FOR HEALTH SERVICE OCCUPATIONS

a. UCCSN Programs for Health Service Occupations: Dental Assistants

Three programs in the University and Community College System of Nevada currently prepare and train dental assistants:

- Associate of Applied Science in Dental Assisting (AAS Degree Program) at Truckee Meadows Community College
- Certificate of Achievement Programs at the Community College of Southern Nevada and Truckee Meadows Community College.

Figure 39 indicates that the total number of students graduating from these programs in academic year 1997-98 was 21. According to program administrators, 44 students are projected to graduate from the same programs in academic year 2000-2001. There are presently no plans to expand statewide capacity in UCCSN programs that train and prepare dental assistants.

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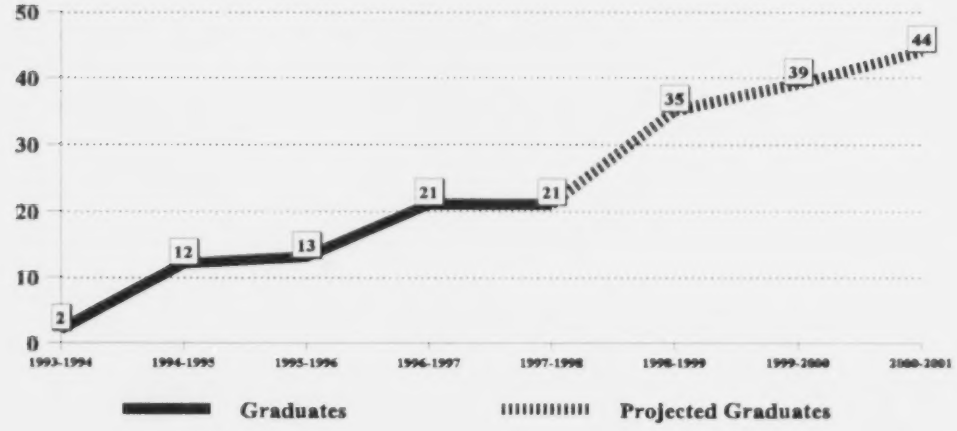
Figure 39: Graduates of UCCSN Programs that Train and Prepare Dental Assistants – 1994 to Projected 2001*



*Graduates of the AAS Degree Program in Dental Assisting (TMCC) and the Certificate Programs in Dental Assisting (CCSN, TMCC).

b. UCCSN Programs for Health Service Occupations: Medical Assistants

One program in the University and Community College System of Nevada currently prepares and trains medical assistants:

- Certificate of Achievement Program in Medical Office Assisting at the Community College of Southern Nevada

In academic year 1997-98, the total number of students graduating from this programs was 3. According to program administrators, 40 students are projected to graduate from the same programs in academic year 2000-2001. There are presently no plans to expand statewide capacity in UCCSN programs that train and prepare medical assistants.

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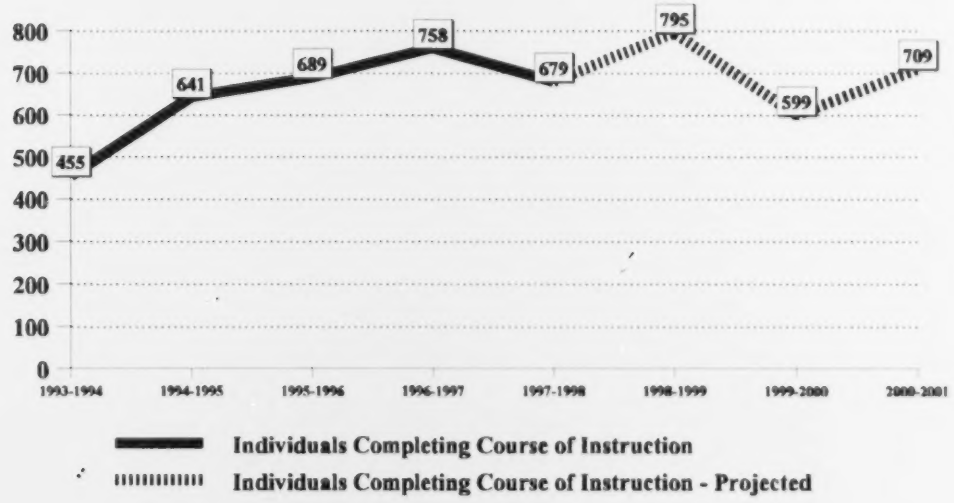
c. UCCSN Programs for Health Service Occupations: Nursing Assistants

The University and Community College System of Nevada currently offers preparatory courses for nursing assistants at the following campuses:

- Community College of Southern Nevada, Great Basin College, Truckee Meadows Community College, and Western Nevada Community College

Figure 40 indicates that the total number of students completing these courses in academic year 1997-98 was 679. According to program administrators, 709 students are projected to complete the nursing assistant courses in academic year 2000-2001. Given the high level of turnover in nursing assistants in Nevada, program administrators are currently exploring ways to expand statewide capacity in UCCSN programs that prepare nursing assistants.

Figure 40: Students Completing UCCSN Courses of Instruction for Nursing Assistants – 1994 to Projected 2001*



*Number of individuals completing the nursing assistant preparatory courses (CCSN, GBC, TMCC, WNCC).

d. UCCSN Programs for Health Service Occupations: Occupational Therapy Assistants

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and Aides

One program in the University and Community College System of Nevada currently prepares and trains occupational therapy assistants and aides:

- Associate of Applied Science in Occupational Therapy Assistant (AAS Degree Program) at the Community College of Southern Nevada

In academic year 1997-98, 14 students graduated from this program. According to program administrators, 16 students are projected to graduate from the program in academic year 2000-2001. There are presently no plans to expand statewide capacity in UCCSN program offerings for occupational therapy assistants and aides.

e. UCCSN Programs for Health Service Occupations: Physical Therapy Assistants and Aides

One program in the University and Community College System of Nevada currently prepares and trains physical therapy assistants and aides:

- Associate of Applied Science in Physical Therapy Assistant (AAS Degree Program) at the Community College of Southern Nevada

In academic year 1997-98, 19 students graduated from this program. According to program administrators, 16 students are projected to graduate from the same program in academic year 2000-2001. There are presently no plans to expand statewide capacity in UCCSN programs that train and prepare physical therapy assistants and aides.

D. ESTIMATED SUPPLY AND DEMAND OF HEALTH CARE PROFESSIONALS IN NEVADA

This section summarizes information presented in this report on employment trends in the health sector and trends in health care education in Nevada. In particular, it combines the best available data on (1) *occupational demand* (i.e., the average number of annual job openings in health care occupations) and (2) *occupational supply* (i.e., the number of certificates and degrees awarded at the minimum educational level required for entry into the profession per occupation). These data are suggestive, rather than conclusive, about the demand for health care professionals in Nevada. Nevertheless, they point to several educational challenges facing the state and highlight the extent to which the University and Community College System is preparing a health care

workforce commensurate with the health care and health workforce needs of Nevada. Table 22 provides a rough estimate of demand and supply of health care professionals in 1998, utilizing data on the average number of annual job openings in each occupation that year and the number of students receiving degrees and certificates from the UCCSN in academic year 1997-1998 in corresponding health care fields.[25] Similarly, Table 23 provides a rough estimate of demand and supply of health care professionals in 2001, utilizing data on the average number of annual job openings in each occupation that year and the projected number of students receiving degrees and certificates from the UCCSN in academic year 2000-2001 in corresponding fields.

In general, most health care occupations in the State of Nevada are currently characterized by a demand for health care personnel in excess of the supply produced by health care programs in the UCCSN. Though the magnitude of these discrepancies varies substantially from one occupation to the next, the data indicate an immediate need to assess the appropriateness and feasibility of expanding statewide capacity in a number of UCCSN programs that prepare and train health care personnel in Nevada. The data in Tables 22 and 23 point to eight occupational categories characterized by a substantial imbalance between both current and projected demand and supply of personnel: dental assistants, dental hygienists, licensed practical nurses, medical assistants, medical records technicians, physical therapists, physical therapy assistants, and registered nurses.

Tables 22 and 23 also indicate a second set of eleven occupational categories characterized by a significant – though comparatively more modest – imbalance between current and projected demand and supply of personnel: dentists, emergency medical technicians, medical laboratory technologists, nursing assistants,[26] opticians, physicians, pharmacists, pharmacy technicians and assistants, physician assistants, radiologic technologists and technicians, and respiratory therapists. With respect to each of these occupational categories, programs and campuses in the UCCSN have begun to expand the capacity of existing programs (e.g., programs have developed plans to increase enrollments, added summer courses, and developed Web-based course offerings) or have proposed new programs to address the growing demand for personnel in these health care professions (e.g., the proposed dental and pharmacy schools).

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[25]Of course, colleges and universities beyond the state's boarders prepare a significant number of health care professionals who ultimately take employment in Nevada, i.e., occupational supply is more than the sum of UCCSN certificate and degree recipients.

[26]The number of students completing preparatory courses for nursing-assistant work actually exceeds projected openings. However, this occupation is characterized by extremely high turnover. Nursing program administrators have indicated that the demand for nursing assistant courses of instruction currently exceeds existing course offerings.

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Table 22: Estimated Demand and Supply of Health Care Professionals in Nevada – 1998

HEALTH CARE OCCUPATION	PROJECTED ANNUAL JOB OPENINGS – 1996 to 2006	DEGREES and CERTIFICATES AWARDED by the UCCSN – 1997-98
Health Diagnosing Occupations		
Chiropractors	Less than 20	–
Dentists	40	–
Optometrists	Less than 20	–
Physicians	140	47
Podiatrists	Less than 20	–
Health Assessment and Treatment Occupations		
Dietitians and Nutritionists	Less than 20	17
Occupational Therapists	30	–
Pharmacists	110	–
Physical Therapists	80	0
Physician Assistants	Less than 20	–
Recreational Therapists	Less than 20	3
Registered Nurses	760	312
Respiratory Therapists	50	0
Speech-Language Pathologists and Audiologists	30	25
Health Technologists and Technicians		
Cardiology Technologists	Less than 20	–
Dental Hygienists	110	31

(Continued)

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Table 22, continued

HEALTH CARE OCCUPATION	PROJECTED ANNUAL JOB OPENINGS – 1996 to 2006	DEGREES and CERTIFICATES AWARDED by the UCCSN – 1997-98
Health Technologists and Technicians, continued		
Electrocardiograph (EKG) Technicians	20	–
Emergency Medical Technicians	90	19/220*
Licensed Practical Nurses	200	22
Medical Laboratory Technologists and Technicians	120	34
Medical Records Technicians	70	9
Nuclear Medicine Technologists	Less than 20	5
Opticians	30	0
Pharmacy Technicians and Assistants	60	11
Radiologic Technologists and Technicians	90	41
Surgical Technologists and Technicians	30	–
Health Service Occupations		
Dental Assistants	110	21
Home Health Aides	130	–
Medical Assistants	100	3
Nursing Assistants	300	679
Occupational Therapy Assistants and Aides	Less than 20	14
Physical Therapy Assistants and Aides	50	19

*Note In academic year 1997-1998, 19 students received certificates in emergency medical technology and 220 students completed coursework in emergency medical technology.

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Table 23: Estimated Demand and Supply of Health Care Professionals in Nevada – 2001

HEALTH CARE OCCUPATION	PROJECTED ANNUAL JOB OPENINGS – 1996 to 2006	PROJECTED DEGREES and CERTIFICATES AWARDED by the UCCSN – 2000-2001
Health Diagnosing Occupations		
Chiropractors	Less than 20	–
Dentists	40	–
Optometrists	Less than 20	–
Physicians	140	53
Podiatrists	Less than 20	–
Health Assessment and Treatment Occupations		
Dietitians and Nutritionists	Less than 20	18
Occupational Therapists	30	–
Pharmacists	110	–
Physical Therapists	80	21
Physician Assistants	Less than 20	–
Recreational Therapists	Less than 20	6
Registered Nurses	760	353
Respiratory Therapists	50	25
Speech-Language Pathologists and Audiologists	30	26
Health Technologists and Technicians		
Cardiology Technologists	Less than 20	–
Dental Hygienists	110	30

(Continued)

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Table 23, continued

HEALTH CARE OCCUPATION	PROJECTED ANNUAL JOB OPENINGS – 1996 to 2006	PROJECTED DEGREES and CERTIFICATES AWARDED by the UCCSN – 2000-2001
Health Technologists and Technicians, continued		
Electrocardiograph (EKG) Technicians	20	–
Emergency Medical Technicians	90	25/235*
Licensed Practical Nurses	200	54
Medical Laboratory Technologists and Technicians	120	121
Medical Records Technicians	70	12
Nuclear Medicine Technologists	Less than 20	12
Opticians	30	15
Pharmacy Technicians and Assistants	60	30
Radiologic Technologists and Technicians	90	70
Surgical Technologists and Technicians	30	–
Health Service Occupations		
Dental Assistants	110	44
Home Health Aides	130	–
Medical Assistants	100	40
Nursing Assistants	300	709
Occupational Therapy Assistants and Aides	Less than 20	16
Physical Therapy Assistants and Aides	50	16

*Note: In academic year 2000-2001, 25 students are projected to receive certificates or degrees in emergency medical technology and 235 students are projected to complete coursework in emergency medical technology.

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A final set of occupational categories appear to be characterized by a rough balance between the current and projected supply and demand of health care personnel: dietitians and nutritionists, recreational therapists, and speech-language pathologists and audiologists. The analysis of occupational supply and demand presented in this chapter indicates that there are *no* health care occupations in Nevada characterized by a surplus necessitating a reduction or elimination of existing health care programs in the UCCSN.[27] This finding is remarkable considering that other state and national workforce assessments indicate an oversupply of a number of categories of health care professionals (Bureau of Health Professions 1993; Institute of Medicine 1996; Pew Commission on the Health Professions 1993a).

E. SUMMARY: HEALTH CARE EDUCATION IN NEVADA

This chapter has presented current data on all health care certificate and degree granting programs in the UCCSN, highlighting data on the current and projected number of graduates of each health care education program in the UCCSN. It also provided information on new health-related programs being planned by the UCCSN campuses. Based on the best available employment data and UCCSN graduation figures, the analysis indicates that a number of health care occupations are characterized by an imbalance between projected occupational demand and supply in Nevada. Some of these discrepancies are already being addressed in the form of program expansion and proposals for the creation of new health care programs at UCCSN campuses. Nonetheless, the data strongly indicate a system-wide need to examine capacity adjustment in existing health care education for a number of health care professions in the state.

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[27]This report is deferring judgement on the need for the UCCSN to develop or create programs for the following occupations: chiropractors, optometrists, podiatrists, cardiology technologists, surgical technologists and technicians, or home health aides. There are no existing or proposed UCCSN programs for these occupations.

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RECOMMENDATIONS

A. GENERAL POLICY RECOMMENDATIONS FOR HEALTH CARE EDUCATION IN THE UCCSN

In the most general terms and within available resources, the University and Community College System of Nevada (UCCSN) should prepare a health care workforce that is appropriate for the current and future health and health care needs of Nevada. The development of a health care workforce equal to the health care challenges of Nevada will require system-wide planning and policy analysis that informs the development of new and existing health professional programs in the UCCSN.

MEETING THE HEALTH CARE NEEDS OF THE STATE OF NEVADA

Recommendation 1: **The UCCSN should continue to provide high quality health care education programs that prepare health professionals to meet the health and health care needs of the citizens of Nevada.**

In addition, the UCCSN should develop and expand programs that:

- Address well-established health care needs in the state, such as the geographic and specialty maldistribution of primary health care provision in Nevada;
- Support graduates of health care programs and health care practitioners in their professional education and provision of health care to Nevadans; and
- Address well-established public health needs of the state, such as the high prevalence rates for "at risk" behaviors (e.g., smoking, substance abuse).

MEETING THE HEALTH CARE WORKFORCE REQUIREMENTS OF NEVADA

Recommendation 2: **The UCCSN should provide high quality health care education programs that meet the Nevada health care industry's evolving needs for qualified health care professionals.**

In addition, the UCCSN should continue to provide educational programs that:

- Anticipate the changing professional opportunities available in the health sector, such as growing employment opportunities in outpatient health care;

- Prepare health professionals to succeed in an increasingly corporate-oriented, managed-care health care environment; and

- Expand primary health care training and employment opportunities for UCCSN degree candidates and program graduates.

MEETING THE EDUCATIONAL NEEDS OF NEVADANS

***Recommendation 3*: Generally, the UCCSN should strive to improve the access of resident Nevadans to health professions education through a variety of means, including traditional classroom-based instruction and distance education.**

In addition, the UCCSN should continue to:

- Assist health care education programs to expand educational opportunities for groups that have been historically under-represented in the health professions and leadership positions in the health services industry; and

- Support strategies that ensure that graduates of UCCSN health professions programs remain in the state to practice.

B. RECOMMENDATIONS FOR HEALTH CARE EDUCATION PROGRAMS IN THE UCCSN

***Recommendation 4*: Based on an assessment of current and projected statewide data on occupational supply and demand in health care occupations contained in this report, it is recommended that the UCCSN immediately undertake an evaluation of the appropriateness and feasibility of expanding statewide capacity in a number of UCCSN programs that prepare students to enter certain health care occupations in Nevada.**

To these ends, it is recommended that:

- The UCCSN immediately organize and convene a committee of health care education program faculty from each UCCSN campus, health workforce experts, and health care industry representatives to assess the appropriateness and feasibility of expanding statewide capacity in UCCSN programs that prepare and train health care professionals in Nevada;

- This committee prioritize UCCSN health care education programs and degree offering in terms of greater or lesser need for statewide capacity adjustment; and

- The findings of this committee form the basis of concrete proposals for statewide capacity adjustment in health care education programs in the UCCSN.

C. RECOMMENDATIONS FOR HEALTH CARE EDUCATION PROGRAM PLANNING IN THE UCCSN

DIRECTOR OF HEALTH PROFESSIONS PLANNING AND ANALYSIS

***Recommendation 5*: The UCCSN should establish a position to direct health professions planning and analysis.**

Generally, the UCCSN "Director of Health Professions Planning and Analysis" will:

- Undertake and coordinate research and policy analysis on issues affecting health care education in the UCCSN;

- Organize and convene committees charged with health care program planning, development, and implementation in the UCCSN;

- Develop and oversee a UCCSN clearinghouse for health workforce research and policy analysis undertaken in the UCCSN, by other analogous state agencies in the US, and national health workforce planners; and

- Serve as a liaison between the UCCSN and other state agencies, state licensing boards, professional associations, and research organizations interested in conducting joint workforce analyses with the UCCSN.

UCCSN campuses and programs will continue to "take the lead" in health care program

planning, development, and implementation. However, the Director of Health Professions Planning and Analysis will ensure that health care program planning is guided by current and systematic data on (1) the health and health care needs of the state's population; (2) state and national health workforce trends; (3) data on health care education programs in the UCCSN; and (4) health care education strategies, models, and policies developed in other states.

BIENNIAL REPORT ON HEALTH CARE EDUCATION IN NEVADA

***Recommendation 6*: The UCCSN should undertake a biennial report on health care education in Nevada.**

The proposed biennial report, "Health Care Education in Nevada," will provide the UCCSN and state policymakers with a regular and systematic summary of health care needs, health care personnel trends, and health care education in Nevada. Rapid and far-reaching changes in the health care sector necessitate an ongoing, up-to-date assessment of trends affecting health care education planning in the UCCSN.

In addition, it is recommended that a final version of the report be completed on or before October 1 of each even-numbered year. This timetable will allow the report to be prepared in a manner that provides adequate time for campus input (on the types of data collected, as well as the report's findings and recommendations), approval by the Board of Regents, and dissemination to the public prior to the submission to each biennial session of the Nevada State Legislature.

FURTHER RESEARCH ON HEALTH PROFESSIONS EDUCATION IN THE UCCSN.

***Recommendation* 7: The UCCSN should immediately undertake research on several important health professions issues facing the UCCSN and the State of Nevada.**

In addition to the preparation of the proposed biennial report, the UCCSN should undertake a series of reports that examine the degree to which educational programs offered by the UCCSN meet the health, health workforce, and educational needs of the citizens of Nevada.

Major reports would include the study of:

- Mental and Behavioral Health Education in Nevada – This report would provide an assessment of mental and behavioral health needs, behavioral health care personnel trends, and behavioral health education in Nevada. The poor mental and behavioral health profile of Nevada warrants an investigation of programs that prepare mental

health professionals in Nevada.

- Education Programs for the Public Health Professions – Nevada's abundant public health problems and underdeveloped public health infrastructure indicate the need for an examination of the current state of public health education in the UCCSN and an assessment of the feasibility of developing public health education certificate and degree programs in the UCCSN (e.g., a Master of Public Health [MPH] program).

- Minority Representation in the Health Professions in Nevada. The under-representation of women and minorities in the health professions and leadership positions in health care is well-documented in the research literature. In addition, bridging the cultural gaps that affect access to health care will require an increase in the number of health care professionals serving the needs of minority and traditionally underserved populations. This report would provide data on minority representation in the health professions that would inform strategies to improve the access and success of minorities in health care education programs in the UCCSN.

- Training, Preparation, and Retention of Primary Care Providers in Nevada. The distribution of primary care provision is a major health care need facing the state. This report would examine ways that the UCCSN could expand training opportunities and programs for primary health care clinicians currently provided by the School of Medicine and other health care programs in the state. This report would provide health and educational planners with up-to-date information on primary health care needs, as well as existing educational strategies that address primary care concerns in other US states. Related research issues include (1) changes in financing mechanisms for undergraduate and graduate health professions education, (2) overcoming barriers to non-physician clinical practice (e.g., the scope of practice), and (3) expanding community based primary care training in rural areas of Nevada. The proposed study would also examine strategies pursued by other states that increase the retention of primary health care providers in Nevada.

- National Forces Influencing the Supply of Health Care Professionals in Nevada. The present study examines the most important factor influencing the supply of health care professionals in Nevada: The number of degree and certificate recipients from UCCSN health care education programs. A number of important, additional factors complicate an accurate assessment of factors shaping the state's supply of health care personnel. These include federal support for health professions education, immigration policy, subsidies to states for the construction of educational facilities, and the number of certificate and degree recipients produced by health care education programs across the nation and, importantly, by programs in neighboring states. The proposed study would examine these

factors in detail and provide a set of recommendations for health and educational policy makers on their likely impact on the health workforce requirements and educational needs of the state.

In summary, the University and Community College System of Nevada should strive to prepare a health care workforce that is appropriate for the current and future health and health care needs of Nevada. Meeting these challenges will demand system-wide planning and policy analysis that informs the development of new and existing health professional programs in the UCCSN.

APPENDICES

Appendix 1: Health Risk Management, Inc.
HRM IHQ *Quality*FIRST Index 1998

Note: States are ranked from "healthiest" (1) to "least healthy" (50).

HEALTH AND HEALTH CARE INDICATOR	NEVADA	US AVERAGE	NEVADA RANK
OVERALL NEVADA HEALTH RANKING - Based on a weighted average of the 46 items listed below	92.7	100	46
POPULATION HEALTH INDICATORS			RANK: 39
Education			***Rank on All Education Measures: 49***
1. **High School Graduation** – Percent of students entering ninth grade who graduate in four years	65.1%	68.6%	37
2. **Senior Citizen Education** – Percent of people aged 65 or older who have attained at least a high school degree	61.5%	53.2%	8
3. **Head Start Enrollment** – Number of children in Head Start programs as a percent of very young children in poverty	10.0%	20.0%	50
4. **College Graduates** – Percent of population over age 25 that has earned a college degree	19.0%	23.6%	42
Environmental Measures			***Rank on All Environmental Measures: 27***
5. **Drinking Water Quality** – Number served by water utilities in violation of the Clean Water Act per 100,000 population	20	82	9
6. **Air Pollution** – Percent of population living in areas that consistently exceed National Ambient Air Quality Standards	62%	45%	40
Behaviors			***Rank on All Behavioral Measures: 29***
7. **Smoking** – Percent of population who have smoked 100 cigarettes in their lives and who currently smoke	26.3%	22.4%	47
8. **Sexually Transmitted Diseases** – Prevalence of sexually transmitted diseases per 100,000 population	150	286	10

(Continued)

Appendix 1, continued

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HEALTH AND HEALTH CARE INDICATOR	NEVADA	US AVERAGE	NEVADA RANK
POPULATION HEALTH INDICATORS, continued			**39**
Behaviors, continued			***29***
9. **Alcohol-Related Traffic Deaths** – Percent of traffic fatalities in which alcohol was a contributing factor	50.1%	40.9%	44
10. Non-Use of Seat Belts – Percent of traffic fatalities in which it is known that a restraint was not used	62.0%	59.0%	27
11. **Sedentary Lifestyle** – Percent of population who do not exercise regularly	21.6%	28.8%	9
12. **Overweight** – Percent of population that is overweight based on the Body Mass Index	26.9%	28.6%	16
13. **Violent Crime Rate** – Number of violent crimes per 100,000 population	811	634	43
Economics	***Rank on All Economics Measures: 26***		
14. **Lack of Health Insurance** – Percent of population not covered by any type of public or private insurance	15.6%	15.6%	34
15. **Overall Poverty** – Percent of the population in poverty (two-year average)	9.6%	13.8%	10
16. **Childhood Poverty** – Percent of population under age 19 living in a household at or below 200 percent of poverty	38.5%	43.2%	19
17. **Income Skew** – Gini Ratio of the proportion of high-income individuals to low-income individuals	0.420	0.445	17
18. **Household Healthcare Expenditures** – Percent of household income spent on health care	11.9%	14.5%	4
19. **Unemployment Rate** – Percent of population currently unemployed (annual average)	5.4%	5.4%	33
20. **Tax on Cigarettes** – State tax per pack of cigarettes levied by each state	$0.35	$0.33	24

(Continued)

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Appendix 1, continued

HEALTH AND HEALTH CARE INDICATOR	NEVADA	US AVERAGE	NEVADA RANK
POPULATION HEALTH INDICATORS, continued			**39**
Health Statistics	***Rank on All Health Statistics Measures: 49***		
21. **Cancer** – Estimated number of new cancer cases per 100,000 population	489	470	29
22. **AIDS/HIV** – Number of new cases of AIDS/HIV per 100,000 population	36.2	21.1	45
23. **Hypertension** – Percent of the population that is aware that they have elevated blood pressure	21.7%	22.0%	22
24. **Births to Teens** – Number of births to women age 19 and under as a percent of all births	13.3%	12.9%	29
25. **Suicide Rate** – Number of suicides per 100,000 population (age-adjusted rate)	21.7	11.2	46
26. **Self-Reported Health Status** – Percent of population reporting that their health status is "fair" or "poor"	14.1%	12.8%	33
HEALTH CARE SYSTEM			**RANK:49**
Operational Resources	***Rank on All Operational Resource Measures: 49***		
27. **Per Capita Costs** – Population weighted per capita expenditures on health care	$286	$306	27
28. **Public Health Expenditures** – Per capita expenditures for non-treatment public health programs	$68	$115	46
29. **Primary Care Physician Shortages** – Percent of population considered underserved by primary care physician	11.6%	9.3%	35
30. **Dentist Shortages** – Percent of population considered underserved by dentists	15.0%	4.1%	48

(Continued)

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Appendix 1, continued

HEALTH AND HEALTH CARE INDICATOR	NEVADA	US AVERAGE	NEVADA RANK
HEALTH CARE SYSTEM, continued			49
Health System Quality ***Rank on All Health System Quality Measures: 31***			
31. **Preventable Hospitalizations** – Preventable hospitalizations per 100,000 population age 65 and older	3,371	3,566	20
32. **Board Certified Specialists** – Ratio of specialists with a subspecialty certificate to those without certificate	20.0%	22.0%	26
33. **Complication Rates** – Number of hospitalizations from complications per 100,000 population age 65 and older	1,590	1,364	41
CONSUMER HEALTH OUTCOMES			**RANK:46**
Preventive Care ***Rank on All Preventive Care Measures: 33***			
34. **Prenatal Care** – Percent of Pregnant women that receive prenatal care during the first three months of pregnancy	77.6%	81.8%	47
35. **Immunizations** – Percent of children under age of 2 who have received recommended vaccines	65.0%	74.0%	49
36. **Mammograms** – Percent of women age 50 and over who have received a mammogram within the last two years	69.8%	69.2%	22
37. **Pap Smears** – Percent of women who have received a pap smear within the last three years	83.2%	83.6%	24
38. **Rectal Examinations** – Percent of men who have received a rectal exam within the last year	38.8%	41.9%	34
39. **Diabetes** – Number of deaths due to diabetes compared to the number of diagnosed diabetics	14.9	20.7	2
Health Condition ***Rank on All Health Condition Measures: 47***			
40. **Immunizable Diseases** – Incidence of disease per 100,000 population considered preventable	36.2	17.6	45

(Continued)

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Appendix 1, continued

HEALTH AND HEALTH CARE INDICATOR	NEVADA	US AVERAGE	NEVADA RANK
CONSUMER HEALTH OUTCOMES, continued			**46**
Health Condition, continued			***47***
41. **Days Lost Due to Illness** – Number of days individuals report that they missed work or daily activities due to illness	3.10	3.05	27
42. **Low Birthweight** – Percent of infants born with a birthweight below 2,500 grams	7.5%	7.4%	26
Mortality		***Rank on All Mortality Indicators: 33***	
43. **Years of Potential Life Lost** – Number of years of productive life lost due to death before age 65	6,002	5,391	41
44. **Infant Mortality Rate** – Number of deaths before age 1 for every 1,000 live births	6.2	7.2	15
45. **Lung Cancer Deaths** – Number of deaths due to lung cancer per 100,000 population	45.8	39.1	44
46. **Heart Disease Deaths** – Number of deaths due to heart and cardiovascular causes per 100,000 population	187.9	179.5	33

Source: Health Risk Management, Inc. (1998).

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Appendix 2 – Morgan Quitno Corporation
Health Care State Rankings 1998

Note: States are ranked from "healthiest" (1) to "least healthy" (50).

HEALTH AND HEALTH CARE INDICATOR	NEVADA	US AVERAGE	NEVADA RANK
OVERALL NEVADA HEALTH RANKING – Weighted composite score of the 23 items listed below	21.17	25.00	39
Births and Reproductive Health			
1. **Low Birthweight Births** – Low birthweight births as a percent of all births in 1996	7.5%	7.4%	28
2. **Teen Pregnancy** – Births to teenage mothers as a percent of all live births in 1995	13.3%	12.9%	29
3. **Prenatal Care** – Percent of mothers receiving late or no prenatal care in 1996	7.9%	4.2%	47
Deaths			
4. **Death Rate** – Total deaths per 100,000 population in 1996	823	875	15
5. **Infant Mortality** – Infant deaths per 1,000 live births in 1997	5.3	7.0	6
6. **Cancer Mortality** – Estimated age-adjusted cancer deaths per 100,000 population in 1998	185	173	44
7. **Suicide** – Number of suicides per 100,000 population in 1995	25.8	11.9	50
Facilities and Providers			
8. **Community Hospitals** – Community hospitals per 1,000 square miles in 1996	0.18	1.38	49
9. **Community Hospital Beds** – Community hospital beds per 100,000 population in 1996	223	325	44
10. **Primary Care Access** – Percent of population lacking access to primary care in 1996	11.7%	10.1%	32

(Continued)

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Appendix 2, continued

HEALTH AND HEALTH CARE INDICATOR	NEVADA	US AVERAGE	NEVADA RANK
OVERALL NEVADA HEALTH RANKING – Weighted composite score of all 23 items	21.17	25.00	39
Financing			
11. **Uninsured Population** – Percent of population not covered by health insurance in 1996	15.6%	15.6%	33
12. **Change in Uninsured Population** – Change in the percent of population uninsured from 1991-1996	17.5% Decrease	8.3% Increase	3
13. **Health Care Expenditures** – Health care expenditures as a percentage of gross state product in 1993	9.5%	12.1%	47
14. **Per Capita Health Care Expenditures** – Per capita personal health care expenditures in 1993	$2,705	$3,020	34
Incidence of Disease			
15. **Cancer Incidence** – Estimated rate of new cancer cases per 100,000 population in 1998	453	459	17
16. **AIDS Incidence** – New AIDS cases reported per 100,000 population in 1997	29.1	23.6	43
17. **Sexually Transmitted Disease Rate** – Cases of sexually transmitted diseases per 100,000 population in 1996	254	323	21
18. **Childhood Immunization** – Percent of children aged 19 to 35 months fully immunized in 1997	70%	76%	46
Physical Fitness			
19. **Immoderate Alcohol Consumption** – Percent of adults who are binge drinkers in 1995	19%	14%	46

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20.	**Smoking** – Percent of adults who have ever smoked 100 cigarettes and currently smoke in 1996	28%	24%	46

(Continued)

Appendix 2, continued

HEALTH AND HEALTH CARE INDICATOR	NEVADA	US AVERAGE	NEVADA RANK
OVERALL NEVADA HEALTH RANKING – Weighted composite score of all 23 items	21.17	25.00	39
Physical Fitness, continued			
21. **Physical Health** – Self-reported reports of days in past month when physical health was "not good" in 1996	2.99 days	2.98 days	25
22. **Overweight Adults** – Percent of adults who are overweight in 1996	28%	29%	13
23. **Safety Belt Usage** – Percent of adults who use safety belts in 1997	71%	64%	12

Source: Morgan Quitno Corporation (1998).

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Appendix 3: ReliaStar Financial Corporation State Health Rankings 1998

Note: States are ranked from "healthiest" (1) to "least healthy" (50).

HEALTH AND HEALTH CARE INDICATOR	NEVADA	US AVERAGE	NEVADA RANK
OVERALL NEVADA HEALTH RANKING – Weighted composite score of the 17 items listed below	- 11.0	0.0	47
Lifestyle Factors			
1. **Prevalence of Smoking** – Percent of adults who are current smokers in 1996	28.2	23.5%	47
2. **Motor Vehicle Deaths** – Number of deaths per 100,000,000 miles driven in 1997	2.4	1.7	41
3. **Violent Crime** – Number of violent criminal offenses per 100,000 population in 1996	811	634	43
4. **Risk For Heart Disease** – Three-item index (obesity, hypertension, sedentarism) of heart disease risk in 1995-1996	-8.0	0	11
5. **High School Graduation** – Percent of 9th graders who graduate within four years in 1995-1996	65.4	68.1	36
Access to Preventative and Curative Health Care			
6. **Unemployment** – Average percent of civilian labor force that is not employed in 1997	4.1	4.6	17
7. **Adequacy of Prenatal Care** – Percent of pregnant women receiving prenatal care in 1996	71.0	74.4	39
8. **Lack of Health Insurance** – Percent of population not covered by private or public health insurance in 1997	17.8%	17.8%	32
9. **Support for Public Health Care** – Index of state and local health and social welfare expenditures in 1995	1.28	1.80	39

(Continued)

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Appendix 3, continued

HEALTH AND HEALTH CARE INDICATOR	NEVADA VALUE	US AVERAGE	NEVADA RANK
OVERALL NEVADA HEALTH RANKING – Weighted composite score of all 17 items	- 11.0	0.0	47
Occupational Safety and Disability			
10. **Occupational Fatalities** – Occupation deaths per 100,000 workers from 1994-1996	13.4	4.2	36
11. **Limited Activity Days** – Average number of days in past 30 days a person is unable to perform household or work tasks in 1996	3.2	3.4	18
Disease			
12. **Heart Disease** – Deaths from heart disease per 100,000 population 1993-1995	154.9	144.8	33
13. **Cancer Cases** – Projected cases of cancer per 100,000 population in 1998	453.2	409.8	18
14. **Infectious Disease** – Reported cases of infectious disease per 100,000 population from 1995-1997	64.9	46.4	44
Mortality			
15. **Total Mortality** – Total deaths per 100,000 population from 1993-1995	577.1	519.1	47
16. **Infant Mortality** – Number of infant deaths per 1,000 live births in 1995-1996	5.7	7.4	5
17. **Premature Death** – Estimated number of years of productive life lost per 100,000 population in 1995	8,977	8,128	40

Source: ReliaStar Financial Corporation (1998).

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Appendix 4: Assumptions and Limitations of Occupational Projections Developed by the State of Nevada Department of Employment, Training, and Rehabilitation

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In the formulation of occupational projections by the Department of Employment, Training, and Rehabilitation, certain social, political, demographic, and economic conditions during the projection period were assumed. As such, the occupational projections presented in Chapter III are best viewed as a rough indicator of the amount of employment change in the Nevada health workforce. Some of the assumptions underlying DETR's projections include:

- No major wars, economic depressions, or natural catastrophes will occur that could significantly alter the national or state economies.
- Current governmental policy will remain essentially unchanged and will encourage orderly economic growth.
- Recent social, technological, and scientific trends will continue in their present direction.
- Government will continue to operate under rigid budgetary restrictions.
- Nevada population growth will not vary significantly from the projections developed by the State Demographers Office.

Some data limitations are present despite every effort to limit problems with the computation and/or presentation of these and other statistical data. These include:

- The data is a measurement of jobs, not individual workers. Therefore, dual jobholders or "moonlighters" will be counted for each job held.
- The data relates to the employer demand only. It is a measure of the jobs that are available. The supply of workers or worker availability for a specific occupation is *not* accounted for.
- No adjustment can be made for the unannounced move into or out of an area by major employers during the projection period. This cannot be anticipated.
- The data is linear between 1991 and 1996 and does not take into account the business cycle variations. That is, the data are linear projections of past employment patterns that are unable to incorporate or anticipate new developments in industries.

Source: Department of Employment, Training, and Rehabilitation (1998b)

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Appendix 5: Job Descriptions of Health Care Occupations Examined in the Report

This appendix contains brief job descriptions of the health care occupations discussed in this report. These descriptions also provide a general overview of minimal educational requirements and licensing requirements for entry into the occupation. Most of the occupations listed below are actually occupational *categories*. That is to say, they encompass a number of specific occupations. For example, "registered nurses" are employed in a variety work settings, possess a wide range of job titles, and perform varying degrees of clinical and non-clinical tasks. These job descriptions were developed from data and publications prepared by the US Bureau of Labor Statistics (e.g., *Occupational Outlook Handbook, 1998-1999 Edition*); the on-line "Nevada Career Information System" developed by the Nevada State Department Employment, Training, and Rehabilitation. Income figures for selected occupations (for some occupations income information is not available); and DETR's *Nevada Wages – 1996: An Occupational Wage Survey for Selected Nevada Industries and Geographic Areas* (1996).

Cardiology Technologists assist physicians in diagnosing and treating cardiac and peripheral vascular ailments, specializing in cardiac catheterization procedures. Training usually consists of completion of a 2-year cardiology technology program. In 1996, the median annual income for cardiology technologists in Nevada was $34,278.

Chiropractors diagnose and treat patients with muscle, nerve, or skeletal disorders, especially involving the spine. They utilize a holistic approach and use natural, drugless, nonsurgical health treatments, relying on the body's inherent recuperative abilities. Chiropractors must be licensed to practice. To become licensed they must meet educational requirements and pass a State board examination. Training usually consists of completion of a 4-year chiropractic college course of study. Nationally, the median income for chiropractors in the US was approximately $80,000.

Dental Assistants perform a variety of patient care, office, and laboratory duties including setting up for and assisting during patient treatment procedures, patient care during and after dental procedures, care and cleaning of dental instruments, and maintenance of patient records. Training usually consists of on-the-job training, however, formal dental assisting programs are available. In 1996, the median annual income for dental assistants in Nevada was $23,421.

Dental Hygienists perform tasks involved in the examination and cleaning of a patient's teeth including removal of plaque and stains, the recording of the presence of disease or abnormalities, application of cavity preventive agents, and the taking and development of dental x rays. State licensure is required to work as a dental hygienist. An associate's degree in dental hygiene is required for most dental office jobs. A bachelor's or master's degree is required for research or teaching. In 1996, the median annual income for dental hygienists in Nevada was $59,821.

Dentists diagnose, prevent, and treat problems of the teeth and tissues of the mouth. All states require dentists to be licensed. Qualification for licensure consists of graduating from a dental school accredited by the American Dental Association's Commission of Dental Accreditation and passing written and practical examinations. In 1995, the median net income for dentists in private practice was approximately $120,000.

Dietitians and Nutritionists refer to a category of occupations that include the specialty areas of community dietitians, management dietitians, and consultant dietitians. Dietitians and nutritionists organize, plan and conduct food service or nutritional programs to assist in the promotion of health and the control of disease. They also may administer the activities of departments providing quantity food services such as hospitals and schools, and may conduct programs in nutritional research. The basic educational requirement is a bachelor's degree. In 1996, the median annual income for dietitians and nutritionists in Nevada was $36,816.

Electrocardiograph (EKG) Technicians assist physicians in diagnosing and treating cardiac and peripheral vascular ailments, specializing in obtaining electrocardiograms which trace the electrical impulses transmitted by the heart. Training most often consists of 8 to 16 weeks of on-the-job training of a person already working in the health care field (e.g., a nursing aide). However, formal certificate programs do exist. Nationally, the median annual salary of EKG Technicians was $20,200.

Emergency Medical Technicians (EMT's) work as a member of an emergency medical team in the administration of first aid treatment and the transportation of sick or injured persons to a medical facility. Formal training is required to become an EMT and is offered at three progressive levels: EMT-Basic, EMT-Intermediate, and EMT-Paramedic positions. Nationally, the average annual salary for EMT's in 1997 was $25,051 for EMT-Basic positions and $30,407 for EMT-Paramedic positions.

Home Health Aides care for elderly, convalescent, or handicapped persons in the home of the patient. Their duties may include changing bed linen, preparing meals, assisting in and out of bed, bathing and dressing the patient and administering oral medications under a doctor's orders or the direction of a nurse. Training requirements vary with most states requiring only on-the-job training. In 1996, the median annual income for home health aides in Nevada was $18,346.

Licensed Practical Nurses (LPN's) care for ill, injured, convalescent, and handicapped persons under the direction of physicians and registered nurses in hospitals, clinics, private homes, sanitariums and similar institutions. All states require licensed practical nurses to pass a licensing examination after completion of a State-approved practical nursing program. In 1996, the median annual income for LPN's in Nevada was $28,787.

Medical Assistants perform various duties under the direction of a physician in the examination and treatment of patients. These duties may include the preparation of the treatment room and the patient, keeping inventory of supplies and instruments, handing instruments and materials to the physician as directed, and maintenance of medical records. Medical assistants may be trained on

the job, however most employers prefer to hire graduates of formal 1 to 2 year programs. In 1996, the median annual income for medical assistants in Nevada was $19,594.

Medical Laboratory Technologists and Technicians is an occupational category that includes the speciality areas of clinical chemistry technologist, microbiology technologist, blood bank technologist, immunology technologist and cytotechnologist. Medical/Clinical laboratory technologists perform complex duties involving examining and testing blood, tissue, and other body substances and evaluating the results obtained. Educational requirements for an entry level position as a technologist is a bachelor's degree. The category of medical/clinical laboratory technicians includes the specialty areas of histology technicians and phlebotomists. Medical/ Clinical laboratory technicians perform routine tests in a medical laboratory for use in treatment and diagnosis of disease such as preparation of vaccines, or execution of tests such as urinalysis and blood counts. Educational requirements for an entry level position as a technician is a certificate or an associate's degree. In 1996, the median annual income for medical/clinical laboratory technicians and technologists in Nevada was $34,278.

Medical Records Technicians (a.k.a. Health Information Technologists) compile and maintain medical records of hospital and clinic patients. Most employers require an associate's degree. In 1996, the median annual income for medical records technicians in Nevada was $20,675.

Nuclear Medicine Technologists prepare, administer, and measure radioactive isotopes in therapeutic, diagnostic, and tracer studies utilizing a variety of radioisotope equipment. They also prepare stock solutions of radioactive materials and calculate doses to be administered by radiologists. They subject patients to radiation, and execute blood volume, red cell survival, and fat absorption studies following standard laboratory techniques. Educational programs range in length from 1 to 4 years leading to a certificate, associate's degree, or bachelor's degree. In 1996, the median annual income for nuclear medicine technologists in Nevada was $35,402.

Nursing Assistants work under the direction of nursing or medical staff to provide auxiliary services in the care of patients. They perform duties such as answering patient's call bells, serving and collecting food trays, and feeding patients. No formal training is required to become a nursing aide; however, employers are increasing demanding that nursing aides be certified (i.e., certified nursing assistants or CNA's). In 1996, the median annual income for nursing aides in Nevada was $16,390.

Occupational Therapists (OT's) work with individuals who have conditions that are mentally, physically, developmentally, or emotionally disabling, and help them to develop, recover, or maintain daily living and work skills. Minimum educational requirements for occupational therapists is a bachelor's degree. Nationally, the median annual income of occupational therapists employed in acute care hospitals in 1997 was $42,700.

Occupational Therapy Assistants and Aides work under the direction of occupational therapist to provide rehabilitative services to persons with mental, physical, emotional, or developmental

impairments. Minimum educational requirements for occupational therapist assistants and aides is an associate's degree or certificate from an accredited community college or technical school. In 1996, the median annual income for occupational therapy assistants and aides in Nevada was $18,013.

Opticians design, measure, fit, and adapt lenses and frames for clients according to written optical prescriptions or specifications. They also prepare work orders for optical laboratories containing instructions for grinding and mounting lenses in frames. No formal education is required to become an optician, however, some employers prefer people with postsecondary training. In 1996, the median annual income for opticians in Nevada was $26,458.

Optometrists examine people's eyes to diagnose vision problems and eye diseases. They test for eye health and visual acuity, depth, and color perception, analyze results, and develop a treatment plan. They may use drugs for the diagnosis and treatment of some eye diseases, prescribe eyeglasses and contact lenses, and provide vision therapy and rehabilitation. All states require that optometrists be licensed. Applicants for a license must have a Doctor of Optometry degree from an accredited optometry school and pass both a written and a clinical State board examination. In 1996, the median annual income for optometrists in Nevada was $106,800.

Pharmacists compound and dispense medication following prescriptions issued by physicians, dentists, or other authorized persons. They also advise physicians and other health practitioners on the selection, dosages, interactions, and side effects of medications and provide information to patients about medications and their use. All states require a license to practice pharmacy. To obtain a license, a person must graduate from an accredited college of pharmacy, pass a State examination, and serve an internship under a licensed pharmacist. In 1996, the median annual income for pharmacists in Nevada was $68,432.

Pharmacy Technicians and Assistants fill orders for unit doses and prepackaged pharmaceuticals and perform other related duties under the supervision and direction of a pharmacy supervisor or staff pharmacist. Duties include keeping records of drugs delivered to the pharmacy, storing incoming merchandise in proper locations, and informing the supervisor of stock needs and shortages. Duties may also include cleaning equipment used in the performance of duties and assisting in the care and maintenance of equipment and supplies. Training to become a pharmacy technician or assistant usually consists of on-the-job training.

Physical Therapists (PT's) provide services that help restore function, improve mobility, relieve pain, and prevent or limit permanent physical disabilities of patients suffering from injuries or disease. All states require physical therapists to pass a licensure exam after graduating from an accredited physical therapist educational program before they can practice. In 1996, the median annual income for PT's in Nevada was $61,506.

Physical Therapy Assistants and Aides perform physical therapy procedures and related tasks designed and supervised by a licensed physical therapist. Physical therapy assistants are typically required to have an associate degree from an accredited physical therapist assistant program.

Physician Assistants (PA's) provide patient services under direct supervision and responsibility of a doctor of medicine or osteopathy. Duties may include eliciting detailed patient histories, making complete physical examinations, and ordering appropriate laboratory tests. Formal education is usually required and programs are generally 2 years long. In 1996, the median annual income for PA's in Nevada was $36,941.

Physicians diagnose illnesses and prescribe and administer treatment for people suffering from injury or disease. There are two types of physicians: Doctors of Medicine (M.D.) and Doctors of Osteopathic Medicine (D.O.). Physicians may be primary care physicians or choose to specialize. All physicians must be licensed to practice. Minimum educational requirements to become a physician include an undergraduate degree, 4 years of medical school, and 3 to 8 years of internship and residency, depending on the specialty selected. In 1995, the median net income after expenses for physicians in the US was $160,000.

Podiatrists diagnose and treat disorders, diseases, and injuries of the foot and lower leg. All states require a license for the practice of podiatric medicine. Generally an applicant must be a graduate of an accredited college of podiatric medicine and pass written and oral examinations. In 1996, the median net income for podiatrists in the US was approximately $91,400.

Radiologic Technologists and Technicians refer to an occupational category that includes the specialty areas of radiographers, CT technologists, magnetic resonance imaging (MRI) technologists, radiation therapy technologists, and sonographers. Radiologic technologists take X-rays and Cat scans or administer nonradioactive materials into patient's blood stream for diagnostic purposes. Formal postsecondary training is usually required and programs range in length from 1 to 4 years depending on the speciality area. In 1996, the median annual income for radiologic technologists and technicians in Nevada was $32,698.

Recreational Therapists provide treatment services and recreation activities to individuals with illnesses or disabling conditions. They use a variety of techniques to treat or maintain the physical, mental, and emotional well-being of clients including arts and crafts, dance, music, and community outings. A bachelor's degree is usually required for entry-level positions. In 1996, the median annual income for recreational therapists in Nevada was $27,539.

Registered Nurses (RN's) is an occupational category that includes the specialty areas of hospital nurses, office nurses, home health nurses, nursing home nurses, public health nurses, occupational health or industrial nurses, and head nurses or nurse supervisors. Registered nurses work to promote health, prevent disease, and help patients cope with illness. When providing direct patient care, they observe, assess and record symptoms, reactions, and progress; assist physicians during treatments and examinations; administer medications; and assist in convalescence and rehabilitation. They also develop and manage nursing care plans; instruct patients and their families in proper care; and help individuals and groups take steps to improve or maintain their health. Registered nurses must be licensed to practice. In all states, students must graduate from a nursing program and pass a national licensing examination to obtain a nursing license. In 1996, the median annual income for registered nurses in Nevada was $43,139.

Nationally, the median annual base salary of nurse practitioners in 1996 was $66,800.

Respiratory Therapists evaluate, treat, and care for patients with breathing disorders. Evaluation duties include testing lung capacity and analyzing blood. Treatment and care duties include setting up and operating various types of equipment such as ventilators, oxygen tents resuscitators, and incubators to administer oxygen and other gases to patients. Formal training is required and programs last from 2 to 4 years. In 1996, the median annual income for respiratory therapists in Nevada was $34,570.

Speech-Language Pathologists and Audiologists treat speech and language disorders. This includes treating people who have trouble making speech sounds, stutter, have problems understanding and expressing language, or have eating difficulties caused by muscle control problems. Audiologists work with people who have hearing and related problems. Minimum educational requirements are generally a bachelor's and master's degree. In 1997, the median annual salary was approximately $44,000 for full-time speech-language pathologists in the US and $43,000 for audiologists.

Surgical Technologists and Technicians assist in operations under the supervision of surgeons, registered nurses, or other surgical personnel. Their duties may include helping to prepare the operating room, instruments, and the patient for surgery as well as assisting the surgeon and surgeon assistants during an operation by passing, holding, and counting instruments and supplies. Formal training is required and programs usually last from 9 months to 2 years. In 1996, the median annual income for surgical technologists and technicians in Nevada was $27,206.

Appendix 6: Descriptions of Industry Segments in the Health Services Sector

This appendix provides descriptions of industry segments in the health services sector reproduced in their entirety from the US Department of Labor's *Career Guide to the Industries* (1998:162-165). All statistics presented in this appendix refer to industry characteristics for the entire US.

Hospitals – Hospitals provide complete health care, ranging from diagnostic services to surgery and continuous nursing care. Hospital-based care may be on an inpatient (overnight) or outpatient basis, and the mix of workers needed varies, depending on the size, geographic location, goals, philosophy, funding organization, and management style of the institution. As hospitals concentrate on improving their efficience, they will continue to shift care from an inpatient to outpatient basis whenever possible. Many hospitals have also expanded into long-term and home health care services, providing a continuum of care for the communities they serv. Some hospitals specialize in the treatment of the mentally ill, cancer patients, or children.

Hospitals employ workers with all levels of education and training to provide a wider variety of services than other segments of the health services industry. About 1 in 4 hospital workers is a registered nurse. Hospitals also employ many physicians, therapists, and social workers. About 1 in 5 jobs is a service occupation, such as nursing aide or psychiatric aide, food preparation and service worker, or janitor. Hospitals also employ large numbers of health technicians, administrative support workers, craft workers and operatives.

Nursing and Personal Care Facilities – Nursing facilities provide inpatient nursing, rehabilitation, and health related personal care to those who need continuous care, but do not require hospital services. Nursing aides provide the vast majority of direct care. Other facilities such as convalescent homes, help patients who need even less assistance.

About two-thirds of all nursing facility jobs are in service occupations, primarily nursing aides. Professional specialty and administrative support occupations are a much smaller percentage of nursing facility employment than for other parts of the health services industry. Federal law requires nursing facilities to have licensed personnel on hand 24 hours a day, and to maintain appropriate levels of care.

Offices and Clinics of Physicians, Including Osteopaths – Doctors of medicine and osteopathy practice alone and in groups of practitioners who have the same or different specialties. The recent trend is toward group practice, including clinics, free standing emergency care centers, and ambulatory surgical centers. Physicians are much more likely to work as salaried employees of group medical practices, clinics, or health care networks than in the past.

Naturally, many of the jobs in the offices of physicians are in professional specialty occupations, primarily physicians and registered nurses. Even more jobs, however, are in administrative support

occupations, such as receptionists and medical secretaries, who comprise almost two-fifths of the workers in physicians' offices.

Home Health Care Services – Skilled nursing or medical care is sometimes provided in the home, under the supervision of a physician. Home health care services are provided mainly to the elderly. The development of in-home medical technologies, substantial cost savings, and patients' preference for care in the home have made this once small segment of the industry one of the fastest growing in the US economy.

More than half of the jobs in home health care are in service occupations, mostly home-maker-home health aides. Nursing and therapists jobs also account for substantial shares of employment in this industry.

Offices and Clinics of Dentists – Almost 1 out of every 4 health care establishments is a dentist's office. Most employ only a few workers who provide general or specialized dental care, including dental surgery.

About one-third of the jobs in this segment are in service occupations, mostly dental assistant. The typical staffing pattern in dentists' offices consist of one professional with a support staff of dental hygienists and dental assistants. Larger practices are more likely to employ office managers and administrative support workers, as well as dental laboratory technicians.

Offices and Clinics of Other Health Practitioners – This segment includes offices of chiropractors, optometrists, and podiatrists, as well as occupational and physical therapists, psychologists, audiologists, speech-language pathologists, dietitians, and other miscellaneous health practitioners. Demand for services in this industry is related to the ability of patients to pay, either directly or through health insurance. Hospitals and nursing facilities may contract out for these services. This industry also includes alternative medicine practitioners, such as acupuncturists, hypnotists, and naturopaths. Demand for these services has grown with public awareness of the profession.

As in offices of physicians, many jobs are in administrative support occupations. An estimated one-third of workers in this industry are self-employed, more than any other segment of the health services industry.

Medical and Dental Laboratories – Medical laboratories provide analytic or diagnostic services to the medical profession or directly to patients following a physician's prescription. Workers analyze blood, take x rays, or perform other clinical tests. In dental laboratories, workers make dentures, artificial teeth, and orthodontic appliances. Medical and dental laboratories provide the fewest number of jobs in the health services.

Technician and related support workers account for twice the proportion of jobs in this segment as in the total health services industry. These workers are mostly clinical laboratory technologists and technicians and radiologic technologists. This segment also has the smallest percentage of

professional specialty workers of any segment of the health services industry. Many jobs also are in precision production, craft, and repair occupations – most notable, dental laboratory technicians.

Health and Allied Services, not Elsewhere Classified – Among the diverse establishments in this group are kidney dialysis centers, outpatient facilities such as drug treatment clinics and rehabilitation centers and other miscellaneous establishments such as blood banks and providers of child birth preparation classes.

This segment employs the highest percentage of professional specialty workers, many of whom are social workers, human service workers, registered nurses, and therapists.

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